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AGRICULTURAL REFORM
IN THE
UNITED STATES

AGRICULTURAL REFORM
IN THE
UNITED STATES

BY

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First Edition

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PREFACE

The purpose of this book is to discuss the issues of agricultural reform as they are likely to come before the people of the United States in the next ten years. The data and facts which it presents are brought up to the minute; but they also reach back and furnish a basis for discerning the trends of the next decade. It is a study of agricultural policy in the middle distance—not as of the present moment merely, and not in the long run.

There will undoubtedly be some form of national agricultural legislation in the near future, probably before this book comes from the press. But at the very best it will be only a beginning. National legislation can cover only a part of the program of reform. The facts and analyses here presented, if they are well considered and intelligibly stated, should be useful far beyond the present moment, and far outside the confines of our national capital. The author would like his book to be looked upon as a timely contribution to the solution of fundamental problems of national agricultural policy, the field of his most vital interests.

It would not have been possible to have brought this body of material together in such short space of time without the cordial assistance of a large number of workers in the field. All were anxious to contribute what they could to a better understanding of the problems of agriculture. Equally necessary was it to draw freely upon many valuable articles, papers and bulletins published by fellow agricultural economists. The indebtedness of any one who writes in this field to the splendid group of workers in the Bureau of Agricultural Economics, surpasses the possibilities of any accepted form of author's acknowledgment. The authorship of many sections of the book is of a joint nature, and is so acknowledged wherever possible in chapter footnotes. Mr. Henry I. Richards, formerly of the United States Bureau of Agricultural Economics, worked side-by-side with the author from the beginning to the end. Mr. Chester C. Davis, of

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Agricultural Service, Chicago, and Dr. O. C. Stine of the Bureau of Agricultural Economics assisted greatly by reading the manuscript before it went to the publishers. Dr. Mordecai Ezekiel, Dr. L. C. Gray and others of the Bureau of Agricultural Economics also read some of the chapters. No one except the author, however, is responsible for any of the conclusions. The expenses connected with the undertaking were advanced by the Laura Spelman Rockefeller Memorial Foundation, under an arrangement secured by its Director, Dr. Beardsley Ruml.

JOHN D. BLACK.

Cambridge, Massachusetts,
April, 1929.

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AGRICULTURAL REFORM IN THE UNITED STATES

PART I

THE SETTING

We were told in 1921 and 1922 that the hard condition of our farming people was only temporary, that within a short space of time the purchasing power of farm products would be back to par and better, and all would be sweet contentment over the countryside. Some are now telling us that this prophecy has been fulfilled, in spite of the claims of certain rabid persons from the rural districts with political fortunes at stake. But most of us recognize that this is not a fair statement. Congress and a new president are deeply concerned with even the present agricultural situation. The intent of this book is to state the conditions of agriculture as they now are, explain the various remedial measures proposed and weigh them as to their adequacy to cope with these conditions, and outline the remaining measures that need to be taken. Many years will pass before some of the needed changes are wrought. Hence, the discussion is planned to serve beyond the present moment. It will not be possible always to write with assurance and finality. Too many of the records of agriculture are incomplete or uncertain. But whatever records may be cited, whatever opinions quoted, will always be handled dispassionately. The author has no brief for any one plan of farm relief. He does not even have a brief for agriculture. He is thinking only of the greatest long-run social and national well-being.

The book is in five parts: the first including a brief statement as to the present condition of agriculture and the efforts made to improve it; the second, an analysis of the three kinds of surpluses; the third, an analysis of the proposals to raise prices of farm products by government action; the fourth, a description of the other methods of attack on the problem; and the last, a brief statement of the adjustments that are needed in production, land utilization, transportation, marketing, credit and taxation. Part I also outlines in a broad way the various alternatives of a national policy with respect to agriculture and the bases of these.

CHAPTER I

AGRICULTURE NOW

The outstanding fact in the agricultural situation at present is that financial improvement in agriculture has almost ceased since 1924, as is made abundantly clear in Chart 1. Farm incomes were distinctly better in 1925 than in 1924, but this was due to the happy combination of some good crops in the United States and poorer crops abroad.[1] Coincidences of this kind happen only once in a while. Net cash incomes were only $8 per farm larger in the crop year 1927–1928 than in the crop year 1924–1925. As for the present year, the Department of Agriculture has estimated a value of crops, on the basis of the December 1 prices, at 1 per cent under last year's. A 5 per cent greater volume of production has been more than offset by a 5 per cent lower price. Livestock production and prices may slightly more than offset the decrease in crop values. If net cash incomes of farmers are notably higher in the near future than at present, it will be either because of another favorable combination of circumstances, or because some legislation is enacted which is effective beyond any reasonable expectation.

There are no income data back to prewar times exactly comparable with the foregoing, but the changes in gross value of farm products, shown in the solid black line in Chart 2 in the form of percentages of the 1910 to 1914 gross value, are closely parallel with those for "cash receipts" in Chart 1, the principal difference being that the gross value index numbers are on a calendar-year basis, and the latter on a crop-year basis (August to July). The index for 1926, the last year for which it is published, is 172. For 1927 it would have been around 169 as compared with prewar 100. In 1921 this index stood at 136.

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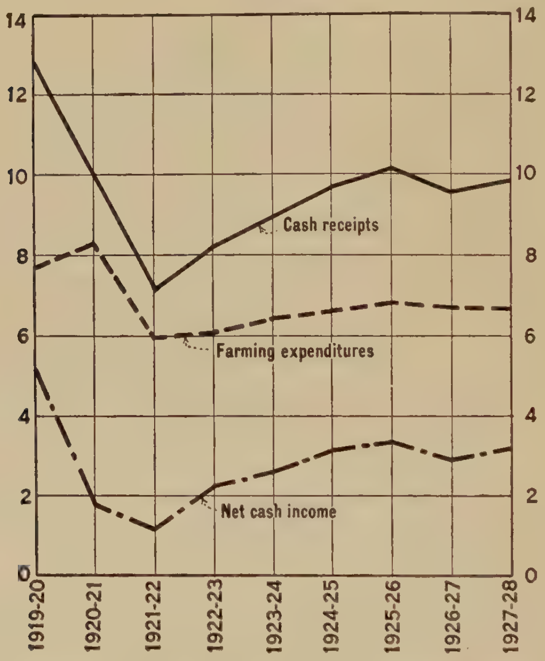
[1] The data on which the conclusions in this section are based are given in more detail in the Appendix, Tables *A* and *B*, together with their sources.

One can understand why incomes have behaved as indicated only after examining the component elements: prices received, prices paid, volume of products sold, volume of goods and services bought.

CHART 1.—FARMERS' GROSS CASH RECEIPTS FROM SALES; CURRENT FARM OPERATING EXPENDITURES; AND NET CASH INCOME AVAILABLE FOR LIVING EXPENSES, BY CROP YEARS, 1919–20 THROUGH 1927–28.*

(Unit: $1,000,000,000)

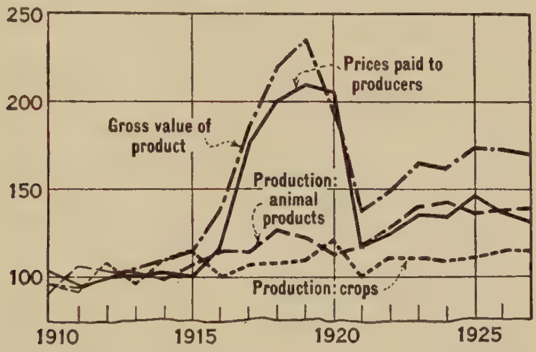


* Acknowledgment is hereby made to the Harvard Economic Society, Inc. for permission to print this chart. See *Crops and Markets*, July, 1928, Table 7, for data. The number of farms has remained nearly constant during this period.

Prices.—Those who see agriculture as fully recovered focus their attention upon prices in the wholesale market, where the index of agricultural prices in 1927 stood at 146 as compared with 152 for non-agricultural products, making a ratio or "purchasing power of farm products" of 96. The Bureau of Labor Statistics changed the composition of its agricultural group of products at the beginning of 1928, so that this comparison cannot be continued exactly. But for December, 1928, the last month available, the ratio was approximately 100 [2] (agricultural, 151; non-agricultural, 151). These relationships are shown graphically in Chart 3. From September, 1927, to October, 1928, the ratio was over 100. This was the period when the effects of last year's somewhat short crop were being seriously felt in the market. The 5 per cent larger crop of 1928 has brought the ratio back to 99, which may be considered about normal for the present period. The ratio for 1926 was 91; for the short-crop year 1925, 96; and for 1924, 89. The break in prices of farm products began in July, 1920, and in non-agricultural products in November. In December, 1920, the index of wholesale prices of agricultural products had fallen to 140, and of non-agricultural products, to only 208. The index of non-agricultural products in its lowest year in 1921 never got closer than 34 points to the 133 for agricultural products in that year. From 1921 to 1924 the spread between the two series narrowed rapidly,

CHART 2.—PRODUCTION OF CROPS AND OF ANIMAL PRODUCTS, PRICES PAID TO AGRICULTURAL PRODUCERS, AND INDEX OF GROSS FARM VALUE OF ANIMAL PRODUCTS PLUS TOTAL CROPS NOT FED TO LIVE STOCK, ANNUALLY, 1910–27.*

(For gross value and for production, base 1910–14 = 100; for prices paid to producers, base August 1909–July 1914 = 100)



* Acknowledgment is hereby made to the Harvard Economic Society, Inc., for permission to reprint this chart. See Appendix, Tables *A* and *B*, for data.

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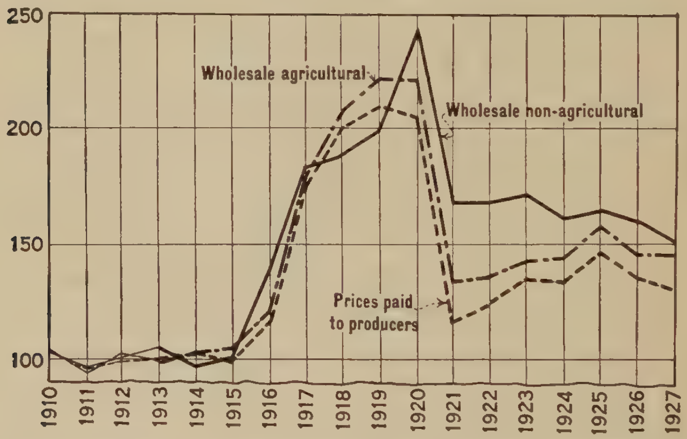
[2] It is not possible to make an exact comparison. All that one can do is to assume that the change from 1927 to 1928 would be the same with the old group of products as with the new one.

principally as a result of a rise of the agricultural index. Since 1924, if we exclude the exceptional year 1925, the ratio has probably risen only about 16 points.

To see the price situation in its true light, one must look at it as it exists at the farm, not in the large wholesale markets in the cities. The dotted line in Chart 3 traces the course of prices paid to producers at the farm. These never rose as high as wholesale prices, and at the pit of the depression in 1921 were only 16 per cent above prewar prices, as compared with 33 per cent for wholesale prices of farm products. In the next 2 years prices paid to farmers gained on wholesale prices, so that the indexes stood only 8 points apart in 1923: 135 and 143. Since then the spread has been widening again, the indexes in 1927 standing at 131 and 146, or 15 points apart. For 1928, they stood at 139 and 156, or 17 points apart. Cornell University publishes an index of spreads between farm and retail prices of farm products. In October, 1928, the last month for which it is available, it stood at 96 points above the prewar index. It has risen 6 points since 1921, and 16 points since 1924.

CHART 3.—WHOLESALE PRICES OF AGRICULTURAL AND OF NON-AGRICULTURAL COMMODITIES AND PRICES PAID TO AGRICULTURAL PRODUCERS, ANNUALLY, 1910–27.*

(Wholesale prices, base 1910–14 = 100; prices paid to producers, base August 1909–July 1914 = 100)



* Acknowledgment is hereby made to the Harvard Economic Society, Inc., for permission to reprint this chart. See Appendix, Table *A*, for data.

The principal cost items entering into spreads between farm and wholesale, and wholesale and retail prices are wages and salaries, rents and freight rates. All of these are remaining close to the levels of 1919 and 1920, wages and salaries probably a little higher, rents and freight rates a little lower. Under the circumstances, one could understand a failure of middlemen's margins to narrow very much since 1921. But to account for their widening again since 1923 is not so easy. Perhaps profits have been larger. Perhaps the number of middlemen has increased under the stimulus of higher profits, so that some of the increased profits have been absorbed in higher costs. Perhaps more high-powered salesmanship and more advertising account for it. Perhaps consumers are demanding more services with the goods they buy—installment buying and the like. Perhaps the higher tariff duties are getting in their work.

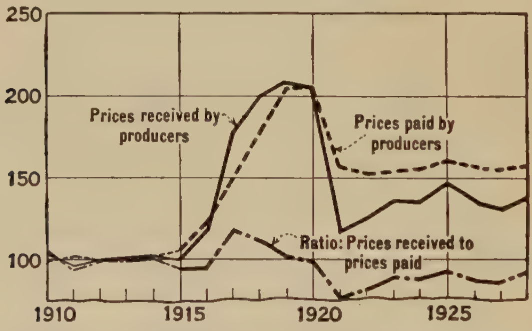
Higher margins involve not only the prices received by farmers, but also the prices paid by them. In Chart 4, it appears that the lowest point reached by the index of prices paid by farmers was 152 in 1922, and that this index has risen somewhat since, to 156 for the latest month available. A simple average of the 12 months will give 156 for 1928, which is about its average level since 1924. This index is made up of two parts: commodities used in family living and commodities used in farming operations. The former has ranged from 160 to 165 since 1921, the latter from 140 to 149. Feed, a farm product, is the largest item in the latter. It would appear that the spread has widened more between the farmer and the wholesaler than between the wholesaler and the consumer.

Chart 4 also shows the ratios of prices received by farmers to prices paid by them, which are now published by the Department of Agriculture as the official indexes of the "purchasing power of farm products." This ratio stood at 86 in December, 1928, the latest month for which it is available. It stood at 75 in 1921. But beginning with 1923, it has stood by years as follows: 88, 87, 92, 87, 85, 89. There is certainly nothing in these indexes to indicate that agriculture has fully recovered, or that there has been any improvement in agricultural conditions since 1924. And clearly these are the price relationships to observe and not those in the wholesale markets.

Furthermore, the index numbers for prices paid by farmers do not include three important items of farm expenditures: wages of hired labor, taxes, and interest on mortgages. The index for wages has risen from 146 in 1922 to 169 in 1928, nearly all the increase coming before 1924. The index for taxes stood at 258 in 1927, as compared with 217 in 1921. It has, in fact, been climbing slowly upward since 1924, when the index number stood at 249. This index, as will be pointed out later, includes more than just higher prices—principally more roads. Mortgage interest rates have declined considerably since 1921, probably by as much as 0.7 per cent.

CHART 4.—INDEXES OF PRICES RECEIVED BY AGRICULTURAL PRODUCERS, PRICES PAID BY AGRICULTURAL PRODUCERS FOR COMMODITIES USED IN LIVING AND PRODUCTION, AND RATIO OF PRICES RECEIVED TO PRICES PAID.*

(Base, August 1909–July 1914 = 100)



* Acknowledgment is hereby made to the Harvard Economic Society, Inc., for permission to reprint this chart. See Appendix, Tables *A* and *B*, for data.

Volume of Output.—For crops, production in 1927 was 13 per cent larger than the average for 1910 to 1914, and for animal products 40 per cent larger. Chart 2 shows that this increase has been continuous almost since 1910, spurting a very little during the war years, sagging a little in 1921 due to a poor crop year, but running strong in 1923 and 1924 and since. Since 1921, crop production, after making allowance for the low crop yields in that year, has increased 5 points on the index scale, and livestock production has increased 24 points. These increases in output must be combined with the prices received by farmers to give the gross values of farm production shown by the heavy line in Chart 2. For example, the price index of 136 in 1926 would require an index of volume of output of 126 to give the index of 172 for gross value of production for that year. The 126 may be taken as a rough average of the 113 and 137 for crops and livestock, respectively, for that year. The comparable figure for 1927 would be around 129. The year 1928 will show another slight increase. Since 1921, crop and livestock production together have probably increased 14 per cent.

Space does not permit entering into detail as to how this increase in production has come about. The number of farms has been nearly constant since 1910, gaining 86,841 or 1.4 per cent by 1920, losing 76,703 or 1.2 per cent by 1925. Between 1910 and 1920, 77,000,000 more acres of land was taken into farms; in the next 5 years, 31,000,000 of land went out of farms. There was a decrease in every section except the Mountain states. It was greatest in the three Atlantic groups of states. Between 1910 and 1920, 45,000,000 more acres of land went into crops, consisting of 40,000,000 acres of pasture that were plowed and 5,000,000 acres of timber land that were cleared. The 5 years since 1920 have shown a decrease of 19,000,000 acres of land in crops, nearly half of which is land which has gone into brush and timber. But the new acres that went into crops in 1918 to 1920 did not increase production greatly, nor has their loss reduced it. Dr. O. E. Baker explains the recent increase in agricultural production as follows:[4]

> This increase in agricultural production since the World War, despite a decrease in crop land and in number of livestock on farms, is owing primarily: (1) to the release for other uses of 15 to 20 million acres of crop land formerly required to feed the horses and mules which have been replaced by tractors and automobiles; (2) to increasing efficiency of production, especially in the amount of milk and meat produced per unit of feed consumed; and (3) to a shift from the less productive classes of animals per unit of feed consumed toward the more productive (*i.e.,* from beef cattle to dairy cattle and swine), and from the less productive crops per acre toward the more productive (*i.e.,* less wheat and more corn in the North, less corn and more cotton

---

[4] "Population, Food Supply, and American Agriculture" (address before the joint session of the Farm Economic Association and the Rural Section of the American Sociological Society, in Washington, Dec. 29, 1927).

in the South, and more vegetables and fruits especially in California and Florida).

Buying Power.—The buying power of farmers has increased since 1921 by this probable 14 per cent gain in output combined with the rise from 75 to 89 between 1921 and 1928 in the ratio of prices received to prices paid—*i.e.*, by something like 36 per cent. The data upon which Chart 1 is based, which are on a crop-year basis wholly, indicate a 33 per cent increase in buying power between 1921–1922 and 1927–1928. Calculating the increase directly from the indexes of gross value of production in Chart 2 would give an increase in buying power of 23 points in the index scale between 1921 and 1927.[5] Most of this increase came before 1924. Buying power in 1921, according to this set of data, was 13 points below prewar; in 1927, 10 points above prewar. The data upon which Chart 1 is based indicate 14 points above prewar rather than 10 as the level of buying power in 1927. The 14 is the more nearly correct.

Volume of Input.—The increase of 14 per cent in buying power over prewar is highly significant. It has been felt by all those who have had goods to sell in the rural districts. But it has helped farm people much less than this figure would indicate. First, as already suggested, some of it has been absorbed in the increases in taxes, wages and even mortgage payments that have occurred since 1921. Although mortgage interest rates have declined, mortgages on owner-operated farms increased 13 per cent between the censuses of 1920 and 1925, in spite of the foreclosure of many of the largest mortgages. Second, the larger production since 1921 has required or should require a larger input of cost goods—of machinery, building materials, feed, fertilizer, sprays, threshing fees, twine, and especially gas and oil for tractors, trucks and automobiles. The data upon which Chart 1 is based indicate a 19 per cent increase since 1921 in the quantity of such goods and services. Domestic shipments of farm machinery were 48 per cent larger in 1927 than in 1923, and ran about one-fifth larger in 1928 than in 1927.

The 14 per cent gain in buying power as compared with the prewar period is surely largely absorbed in higher taxes, wage bills, mortgage payments and current operating expenses. Of the 158 per cent of increase in taxes since the prewar period, at least 70 per cent represents increase in volume of public goods and services rather than higher cost rates for labor and materials in public use. Data prepared by the Census Bureau show 1.68 persons "gainfully employed" per farm in 1925 as compared with 1.75 in 1920 and 1.79 in 1910. The small decline is probably mostly in family labor. The index of wages of hired labor stood at 169 in 1928, as compared with the 139 for prices of farm products at the farm. The average mortgage per owner-operated farm in 1925 was $4,004, as compared with $3,356 in 1920, and $1,715 in 1910. No satisfactory data are available for changes in current operating expenses over the whole period.

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[5] From 87 to 110, equal to a 23 per cent increase. These two methods do not give exactly the same results because the data are not on exactly the same basis.

Although the spending of a large part of a 14 per cent increase in buying power as just indicated has not improved the farmer's financial condition greatly, it has furnished more business for city people who deal with farmers. Even tax money in due time becomes grist for the city business man.

Family Living.—Although specific data are lacking, there is little doubt that the plane of living of farm families is considerably higher now than in 1910 to 1914. It has risen appreciably even since 1921. More farm families have motor cars now than in 1921, and probably fewer of them have cheap cars. There has been a rapid increase in the last 10 years, no doubt halted for a while in 1921 and 1922, in the number of farm homes with telephones, radios, lighting systems, water systems, furnaces, and electricity. Farm people are wearing much more nearly the same sort of clothes as city people than was true 10 years ago. There are sections of the country where no doubt these changes have not been very pronounced; but in others they have been little short of revolutionary.

Where has the buying power come from for this rise in the plane of living? To start with, some of these improvements in living have required little or no additional income. They have come to farm people along with other folks along with the progress of the arts and inventions. But it also seems clear that a considerable part of the 23 (or 33 or 36) per cent gain in buying power since 1921 has been employed in better living in place of being used to pay off mortgage debt, to erect farm buildings, to buy land and farms, or to buy purebred livestock. Not only have fewer farm buildings been erected, but existing buildings and fences have not been kept in their usual repair. The increased buying of farm machinery has been due partly to an effort to save labor bills, and partly to a desire to make farm work lighter and more interesting. A standard of living consists partly of a standard of work, in which hours of labor and energy input are the principal ingredients. Also, fewer farms have been bought and sold, which means that fewer farmers have been able to retire from farming and, hence, that less of the income from farming has been carried off to the city. Fewer tenants and farmers' sons have saved money with which to buy farms. One must be careful to realize in this connection that not all farmers are in the same financial position. Most of those with heavy mortgages have no doubt kept down their family living expenses; but of the others, many more than formerly have spent on motor cars and the like what would have gone into improvements and savings of one sort or another in the days before the war. Nor must it be thought that none of the farmers have saved. Thrift is still highly honored in most farm households—and harshly observed in some of them. But our farm people are getting farther and farther removed from the generation that grew up among the rigors of the frontier or in conditions of penury learned in rural Europe.

Population Decline.—One other change has also had an important effect on the buying power of farm people, namely, the decline in the farm population since 1920. The Census Bureau's best estimate of the population living on farms in 1910 is 32,077,000. The nearest comparable figure for 1920 was 31,614,000;[6] for 1925, 28,982,000.[7] The estimate of the Department of Agriculture for 1928, based on a rather meager sampling of population movements, is 27,794,000.[8] This is a decline of 3,820,000 in 8 years, over 400,000 per year. In terms of the 1927 to 1928 increase, this factor alone is equivalent to an 11 per cent increase since 1921 in the net cash income per person on farms. This means much more well-being per person, but not more total buying power.

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[6] Fourteenth Census, "Agriculture," pp. 891–892.

[7] U. S. Census of Agriculture, 1925, *Summary of Statistics by States,* Part III, p. 52.

[8] *Report of the Secretary of Agriculture,* 1928.

While the farm population was declining 2,000,000 between 1920 and 1925, the number of persons "gainfully employed" in agriculture declined 600,000 according to the census estimates. This indicates that the rural population decline has been in women and children mostly.

The popular explanation of the decline in farm population is that it represents a response to the relatively unfavorable position of agriculture. Apparently, this is only one element in it. A more important explanation is the mechanization of agriculture which has taken a new spurt since 1915 with the wide adoption of the motor car and truck, the tractor, and the combine harvester for small grains. The most important explanation of all is the slackening of agricultural expansion into new areas. The rural population has been declining in the older farming regions for a long time—over 100 years in some sections of the East; for perhaps 30 years in Iowa and the prosperous farming sections of the North Central states. But the new rural population springing up on the western frontier, and following the logging-off of timbered lands in the North until some time after 1910, was more than enough to offset the losses in the older farming regions.

In spite of the loss of rural population and mechanization of production, there does not seem to have been much of a reduction in the number of actual workers per farm. It must be remembered that production per farm has increased nearly 30 per cent since 1910. Not all of this increase has been of the kind that can be handled by power and machinery. The data prepared by Dr. E. Dana Durand of the Department of Commerce indicate that output per worker in agriculture increased 47 per cent between 1900 and 1925, exactly the same as in manufacturing. Between 1910 and 1920, agriculture gained 20 per cent in output per worker, and between 1920 and 1925, 18 per cent.[9] Thus in round numbers 10 persons in 1925 were turning out the same agricultural product as 14 in 1910 and 12 in 1920.

Failures.—The foregoing makes it easy to see why many farmers have found it difficult to meet expenses during even the past 4 years. Those with little mortgage indebtedness and no unusual expenses, such as for maintaining children away from home at school, have usually been able to make ends meet. No

[9] See *Am. Econ. Rev.* (*Supplement*), pp. 122–130, March, 1928.

doubt another large group has managed to get along because it has been willing to keep its plane of living close to a prewar basis. Others have done it by working harder, and working members of their families harder and hiring less labor. But not even all these procedures have been sufficient to save the day for many who bought farms under heavy mortgage in 1918 to 1920; or who have operated in areas where conditions have been especially adverse. Most farmers can stand a severe financial strain for a year or two—such a strain as in the years of 1921 and 1922; but a strain which continues with only partial abatement for six or eight years will break most of the insecure ones. The farm bankruptcy rate per 1,000 farms jumped from 0.21 in 1920 to 1921 to 0.50 in 1921 to 1922, 0.93 in 1922 to 1923, and to slightly over 1.20 for 1924, 1925 and 1926. Only in 1927 does the rate show a decline to 0.99 per 1,000 farms.[10] Of the farms in the United States reported to the Department of Agriculture as changing ownership in 1927 to 1928, excluding the 15.6 per thousand farms that were involved in the settlement of estates, 45.2 per cent were forced sales. The comparable figure for 1926–1927 was 44.2 per cent; and for 1925 to 1926, 40.5 per cent. Forced sales in this report include bankruptcies, foreclosures, delinquent-tax sales, loss of title by default of contract, surrender of title to avoid foreclosures, and related methods of transfer. The year 1927 to 1928 showed some decline in the Mountain states, where such sales had been most pronounced in the years previous. Many states elsewhere showed small increases in the forced-sale rate.[11]

A report just issued by the United States Department of Agriculture, which summarizes farm real-estate conditions as of years ending Mar. 15, indicates fewer voluntary sales of farms in 1927 to 1928 than in the year previous. The 1926 to 1927 rate was 28.3 per thousand farms. The only agricultural states showing a pronounced upward drift were Montana, Wyoming, Idaho and the two Dakotas. In these five states, and in certain localities within a number of other states, local farmers are apparently beginning to buy land for themselves or their sons to operate.

Land Values.—In the year ending Mar. 1, 1928, the Depart-

[10] "Agricultural Yearbook, 1927," p. 1164, Table 513.

[11] *U. S. Dept. of Agr., Cir.* 60, Table 21.

ment of Agriculture index of prices of farm real estate declined 2 points, so that it now stands only 17 points above the 1912 to 1914 average, and 53 points under that of 1920. This 2-point decline is the smallest decline reported for any year since the break came. A decline of 5 points accompanied the rather disastrous crop year 1926 to 1927.

This decline in farm property values is the most outstanding development of the period under review. Land values are already far below the price level of farm products; and they are even farther below the present level of farm incomes. This experience is a new one for American agriculture, and highly significant. Land values declined in the North Atlantic states from 1880 to 1910 because of the cheapening of farm products following the opening of the western prairies; but the present decline has reached all sections of the country. The central corn-belt states and the cotton states have experienced the largest decline.

It is easy to see why land values should have declined somewhat in 1921 to 1923. A ''boom'' struck the land market in many sections in 1918 to 1920. This boom was unconsciously based on the assumption that the then-existing high price level had come to stay. In Iowa and Georgia, land prices rose almost as high as did the wholesale price level before the break came. With the rapid decline in prices of commodities in 1920 to 1921, one would expect that the part of the new high level of land prices which was based on high commodity prices would disappear rather quickly. But land prices are still declining and the trend of prices of farm products has been upward for some time, although not very noticeably since 1924. What is the explanation? Some of the decline since 1921 is no doubt merely a matter of lag in readjustments. This might account for a continuing decline, but it will not explain the low level which has been reached. Some explanation of this is found in the fact that forced sales have been so numerous in many neighborhoods as to have established the general level of land prices there, and forced sales are frequently at bargain prices More of it is explained by a shrinkage in that part of current land values which represents capitalization of anticipated increase in land income. Cash rental rates on farm land in Iowa rose at the rate of about 20 cents per acre per year between 1900 and 1919, and at the rate of 34 cents per acre per year between 1910 and 1919. Comparable figures for Ohio are 8 and 10 cents; for southern Wisconsin 10 and 17 cents. Under these circumstances, land was selling even before 1919 and 1920 on the assumption of large anticipated increases in net income. In some areas, as high as 60 per cent of the current value of land in 1919 and 1920 represented this element.[12] Although cash rental rates have been rising again since 1923, landowners no longer see the future in such rosy colors. If they were unconsciously assuming a rate of increase in net income of 15 cents per acre in 1920, and are assuming a rate of only 5 cents now, there is ample explanation in this for a level of land values considerably under the general price level.[13]

Closely associated with this decline in anticipated rate of increase in income from land is the rising scale and standard of living of farm people. This makes them set a higher valuation upon their own time and effort and less willing to pay high prices for farms. It is keeping them from paying off their present mortgages and from saving money to buy land. Present incomes will not support the present scale of living and pay for land at anything like its value in 1920.

Rural Wealth.—At present land prices, an average acre of land will buy only three-fourths as many commodities at exchange in the farmers' retail market as did an average acre before the war. The value of agricultural property has declined from $79,000,000,000 to $58,000,000,000 since 1920. It is unreasonable to say that the farmers of the United States have actually lost $21,000,000,000 since 1920; nevertheless those who bought their farms at the high prices of 1918, 1919 and 1920 have actually lost at this rate. Moreover, most of them bought under mortgage, and these have lost still more heavily. The farmer

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[12] CHAMBERS, C. R., "Relation of Land Income to Land Value," U. S. Department of Agriculture, *Dept. Bull.* 1224, pp. 19 and 30.

[13] This is made clear by inserting these rates and other assumed amounts in the following formula for valuation of a permanent income bearer with incomes increasing at a constant rate, in which $v =$ value, $a =$ current net income, $r =$ prevailing rate of return on safe investments, and $i =$ anticipated increase in annual net income:

$$v = \frac{a}{r} + \frac{i}{r}2; \quad 160 = \frac{5.00}{0.05} + \frac{0.15}{0.0025}; \quad 120 = \frac{5.00}{0.05} + \frac{0.05}{0.0025}$$

who purchased a farm in 1920 at $20,000 under a mortgage of $10,000, assuming that he has made no payments on his mortgage since, now has a farm worth, as an average figure for the whole country $14,000. His equity has shrunk from $10,000 to $4,000. A very large proportion of those who purchased under the conditions assumed no longer have their farms. They were unable to meet their heavy interest and tax payments in the lean years from 1921 to 1923. If this same farmer had made his purchase in 1913, his farm would probably have cost him $12,000, and his mortgage would have been $6,000. Assuming no payments on his mortgage since, his equity would have risen from $6,000 to $8,000. But $8,000 in 1928 represents 11 per cent less purchasing power in the wholesale market than $6,000 in 1913.

The complete picture of the decline in rural wealth must include farmers in both the situations just described and many more, with all sorts of mortgages and at prices all the way from those of 1850 to those of 1928. It must take account of the payments constantly made on mortgages, especially those made from 1916 to 1920. On the other hand, it must reckon with the fact that whenever farmers retire to the city, or estates are settled, wealth is drained off to the city and replaced by new mortgage indebtedness. If the agricultural census of 1925 be taken as a cross-section for comparison with the 1910 census as another cross-section, the average equity of mortgaged owners on their farms in 1910 was $4,574; in 1925, $5,560. But in terms of the wholesale price level of these two years, the 1925 equity was only four-fifths as great as that of 1910. In addition, 36.1 per cent of the owner-operated farms were mortgaged in 1925 as compared with only 33.6 per cent in 1910.

Exports.—One point of interest with respect to agriculture is whether or not the food supply is keeping up with the population. Exports of farm products are a good measure of this. The index of exports of farm products has declined from 134 in 1920 to 112 for the present year. Leaving out cotton, however, the decline has been from 207 to 138. Production of farm products has nearly kept up with the population in spite of a decrease of land in crops because of a great increase in livestock production, because the substitution of gasoline power for horses releases feed or food for other purposes, and for the other reasons mentioned by Dr. Baker earlier. The exporting of the years from

1915 to 1920 was abnormal. We are still far above prewar figures and, excluding cotton, have lost little ground since 1923.

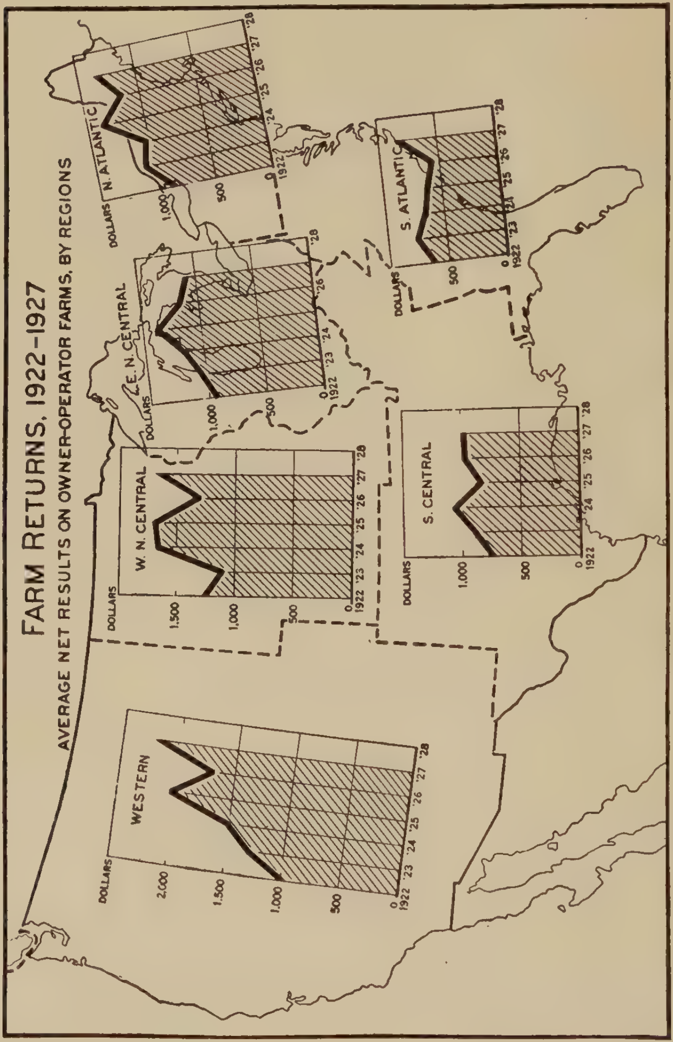

CHART 5.—FARM RETURNS, 1922–1927. AVERAGE NET RESULTS ON OWNER-OPERATOR FARMS, BY REGIONS.*

Regional Differences.—The foregoing discussion is largely in terms of the United States as a whole. The agriculture of the United States is extremely varied; and the various sections have experienced the vicissitudes of the last 10 years in different ways and degrees. This is clearly demonstrated in Chart 5. The

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* A consistent recovery in the Western and North Atlantic regions is shown by the average operating returns reported by cooperating farmers to the Bureau of Agricultural Economics. The trends elsewhere have been less satisfactory. (*From Circ.* 60, *Dept. Agr.*, "The Farm Real Estate Situation," by E. H. WIECKING.)

''farm returns''[14] there recorded have been obtained each year since 1922 by the Department of Agriculture in a special inquiry and represent a sample of some ten thousand farms—13,859 for the latest year. The farms reporting are all owner-operated and much larger than the average. But all parts of the country are represented, and there is little reason to doubt that conditions have changed on these farms at the same time and at about the same rate as on the rest of the farms. The returns are for calendar years.

On Chart 6, the changes in land values since 1920 are represented by the same districts as used in Chart 5, except that each of the three districts, Western, South Central, and North Atlantic, has been subdivided. A comparison of these two charts shows clearly the effect of farm incomes upon farm real estate values. Land values have declined in all sections, but much less than elsewhere in the Pacific and New England sections. The decline seems to have reached its limit in the New England, Middle Atlantic, Mountain, and Pacific states, but still seems to be somewhat sharp in the corn and cotton belts.

In the Western section, conditions have improved rapidly and almost continuously. The range country suffered severely from the decline in beef-cattle prices in 1921. Production had expanded under the war stimulus into areas that could not sustain it under more normal prices, to say nothing of those prevailing in 1921 to 1923. The high prices that have prevailed for wool and mutton for several years and the recent high prices for beef cattle largely explain the improvement in this region. Beef-cattle prices at the farm were 81 per cent above prewar on Dec. 15, the date of the last report; lamb prices, 93 per cent above; and wool prices, 91 per cent above. The sheep flocks of the world have been expanding rapidly since 1921, and prices may be expected to reflect this presently. Fruit and vegetables, prices of which figure so largely in the economy of the Pacific coast, have averaged 17 points higher than the all-farm-products index since 1922, and 52 per cent above their own prewar level. Since July of the past year, however, the fruit and vegetables price index, because of the large crops of apples, oranges, potatoes, and several other important products, has ranged below the general index; and between Sept. 15 and Dec. 15, it dropped 19 points. Wheat also is an important product in the Western section. Gains have been registered in growing this crop since the use of more machinery has brought about cheaper production.

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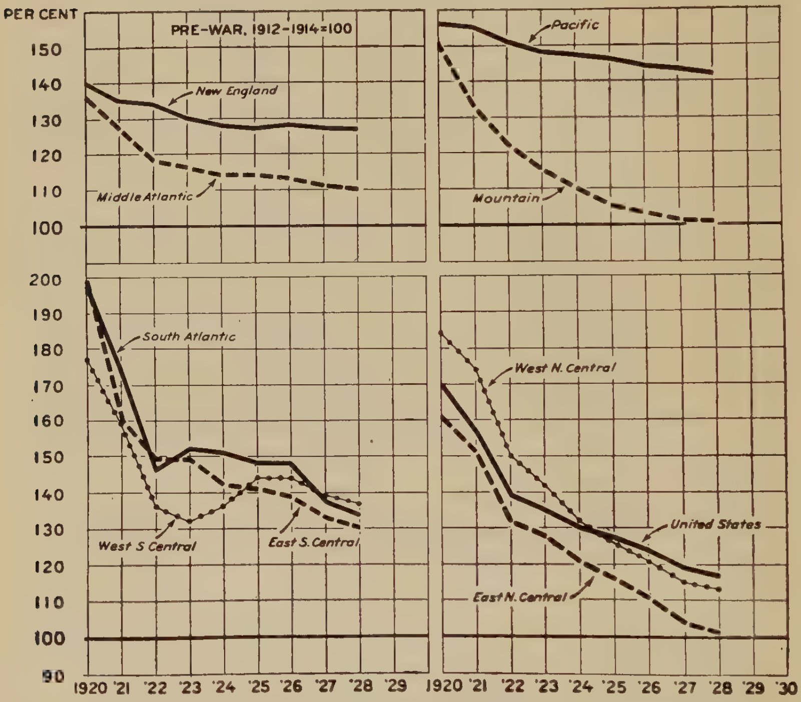
[14] ''Farm returns'' as here defined include an estimate of the value of the home-grown food products used by the farm family.

CHART 6.—FARM REAL ESTATE: ESTIMATED AVERAGE VALUE PER ACRE, AS OF MAR. 1. BY GEOGRAPHICAL DIVISIONS, 1920–1928.*



* Although touching nearly all sections, the year's declines in all cases were less than those shown for the 1926–1927 period. The severest declines were registered in the South and Middle West, where they were also largest in 1926–1927. (*From Circ.* 60, *Dept. Agr.*, "The Farm Real Estate Situation," by E. H. WIECKING.)

The other section in which conditions have distinctly improved is the North Atlantic, although even here returns were not as large in 1927 as in 1925. Land prices in this region rose little during the boom and have declined little since. The prices of the principal farm products of this section have been far more stable than those of cotton, wheat, and corn. Consequently, this section has only partly felt the agricultural depression. Dairy and poultry products and fruits and vegetables figure most largely in the agricultural economy of this section. The dairy-products index has averaged 2 points above the all-farm-products index since 1922, and the poultry-products index has averaged 12 points higher. More important, the increase in freight rates since the war has raised prices and benefited local producers in those North Atlantic states which derive much of their supply of such products from other regions. Prices of poultry products, which had been declining since 1925, have been a little stronger of late. Dairy-product prices can be expected to rise slightly in this region if the tariff duty on cream is raised; but otherwise not. There are apparently no important new competitive advantages to be realized in this section.

The whole corn belt was especially affected by the land boom, and by an overexpansion of corn and hog production before, during, and just following the war. Cattle feeding was financially disastrous for two winters in succession. In the East North Central section, returns in 1927 were not greatly better than in 1922, owing to a combination of a poor crop of corn and low prices for hogs. Dairying has served as a stabilizer of incomes in this section during this period and, where dairying predominates, farmers have fared somewhat better than elsewhere. Statistics compiled at the University of Illinois from account books of about one thousand farms show earnings of 1.8 per cent on the farm investment in 1927 as compared with 4.3 per cent in 1924, 3.3 per cent in 1925, and 2.3 per cent in 1926. The declines are most severe in the beef and hog sections of the state, and least in the dairy sections. Whether or not one accepts the particular method followed of calculating return on investments, the comparison by years must accord closely with the facts. The 1928 corn crop in the corn belt states east of the Mississippi was 36 per cent larger than that of the year before, hog prices were $0.92 higher on Dec. 15 than on the same date in 1922 and 1923, and beef-cattle prices were $3.67 higher. Feeder cattle moved into this section in somewhat larger numbers than the year before. Recent developments have been in the direction of heavier market receipts of livestock and of dairy products and weaker prices than anticipated, but the prospects are still good for a fairly prosperous year for the livestock farmers in this section, except those who have purchased cattle to feed. The low level of general farm incomes in this region in the years 1926 and 1927 must be taken as somewhat exceptional, but no improvement beyond recovery to more normal levels can be expected in view of the prospects for continuing low prices for corn and hogs.

In the West North Central group of states, grains and meat animals furnish the basis of agricultural incomes. The agricultural depression severely affected the spring-wheat region, partly due to low prices for wheat and partly to a succession of poor harvests. The depression came soon enough to check the land boom in this section. Since then, the crops of 1924 and 1927 have improved conditions much, but the balance sheet is still unfavorable. Bank failures and farm foreclosures have been heaviest in this region. The grain-price index has been below the index of farm-products prices for all years since 1920, except 1925. The average for the period is 7 points lower. The grains index for last September was 24 points under the all-farm-products index, and it has declined since then, as has the general index. A good crop of corn in the district largely explains the higher returns for 1927. The beef cattle and the hogs to which this corn was fed in 1927 brought good prices late in the spring and summer of 1928. Movements of feeder cattle into this region were very large from July on. Apparently, 1928 returns will be no higher than those for 1927, and they may be less. Improvement in this section must come from economies in production, as it apparently has come thus far.

The cotton region experienced extremely low prices in 1921, and then very high prices in 1923 and 1924 because of the boll-weevil ravages. These high prices for cotton, combined with low prices for grain and cattle stimulated rapid expansion of cotton growing on the western frontier, which contributed to the 18,000,000-bale crop in 1926. Prices fell to 11 cents a pound. In the older cotton states, many sections are in financial straits. The land boom was as pronounced in the South as in the corn belt, and the recession has been equally severe.

In the South Atlantic states, conditions were getting worse rather than better until the Mississippi flood and other circumstances reduced last year's cotton production to 13,000,000 bales and raised prices to levels ranging, at different periods during the marketing year, from 40 to 80 per cent above prewar. This year's crop is forecast at over 14,000,000 bales, and farm prices are about 18 cents a pound as compared with 21 cents a year ago. Production in Florida, Georgia, and South and North Carolina is forecast at slightly less than a year ago. Only in the event of some general agricultural reorganization in the South Atlantic States can great improvements be expected there.

Agricultural conditions in the South Central group have improved just a little over 1922. Cotton is by far the largest factor in the situation in these states also. The large-scale methods introduced in the regions of lighter rainfall, on the western frontier of the old cotton belt, have thus far proved fairly successful and conditions have been somewhat better in these districts; but probably at the expense of the other cotton districts.

Comparison with Urban.—It is fully as important to understand the state of mind of the farm population at present as it is their economic condition. In order to understand this state of mind, one must do more than make comparison with prewar or 1921-1922 agriculture. Of more importance is comparison with the changes in the prosperity of other economic classes. The outstanding feature of this comparison is the changes in valuation. While the capitalization of the farms of the United States has been declining from $79,000,000,000 to $58,000,000,000, that of urban industry has greatly increased. The Dow-Jones index for 20 [15] leading industrial stocks has risen from a low of 64 in 1921 to 322 at present writing; for 20 railroad stocks, from a low of 66 to 161 at present writing. No doubt the ordinary sorts of industrial and commercial enterprises do not show the phenomenal gains of these leaders; but that they have made large gains in capitalization, no one will doubt. The census no longer gives a figure for valuation of industrial plants comparable to that for farms. The one it gave until 1919 is apparently valueless. The total capital of corporations, as nearly as it can be figured from the corporation income-tax returns, increased from $123,000,000,000 in 1921 to $151,000,000,000 in 1926. Neither of these figures is at all dependable; and some of the increase represents new corporations and growth of old corporations. The Census of Manufactures' figures for value of product of manufacturing plants are $61,737,000,000 for 1919, and $62,713,000,000 for 1925, nearly the same in dollars. If cost of materials and wages and salaries are subtracted from these two figures, the difference is $10,968,000,000 in 1919, and $12,300,000,000 in 1925, the 1919 figure being equal to $8,461,000,000 in 1925 dollars. These figures represent profits, taxes, and insurance mostly. There is surely basis here for an increase in capitalization beyond that representing additional plant and equipment. The vast difference in the valuation of agriculture and urban industry represented by these figures—a phenomenal decline in one set against a phenomenal rise in the other—is the principal basis for the continuing agricultural discontent.

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[15] Thirty stocks since October, 1928.

The comparison of returns on farm investment and other investment is difficult to make because of differences between farm and city price levels. A considerable part of the returns on agricultural investment takes the form of family living—use of dwelling, use of automobile, consumption of fuel, dairy and poultry products, meat, fruit, vegetables, etc.—obtained from the farm. In the usual calculations, these are given rough valuations on the basis of what they, or some rough equivalent of them, could be sold for at the farm, and these valuations are combined with the net money incomes of agriculture to compute a return on the investment. Obviously, such results are not comparable with returns on urban investments. One large part of the farm returns is valued on a basis which is probably one-half lower than the same commodities would cost in the city. Just the food and fuel used by farm families, valued at the farm, equaled 47 per cent of the net farm incomes of 1927 to 1928.[16] Use of dwelling and family use of automobile become large items when thought of in terms of city equivalents.

In Table 1, returns on farm investment are figured with everything valued at the farm, first in column IV with no deduction for the labor and management of the proprietor, after the manner prescribed for accountants of small one-man businesses. In column VI, the returns are figured after a deduction is made for the proprietor's labor at regular rates for hired men employed by the year and boarding themselves. A small further deduction should be made for family labor employed on the farm. Note that the rates of return have run slightly above

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[16] *Crops and Markets,* p. 269, Table 7, July, 1928.

6 per cent in the period since 1924 when agricultural conditions have been rather stable. Allowing the proprietor $500 more as wages of management to go with his wages of labor ($584) would leave only 0.9 per cent as the return for 1927 to 1928. If only that part of the income representing food and fuel is doubled in value to bring it roughly to a comparable urban basis, and $500 is allowed as wages of management, the results in column VI are changed to those in column VII, and the rates in column VIII are left as return on the investment.

Table 1.—Gross and Net Income per Farm and Rate of Return on all Capital Invested in Agricultural Production for the Crop Years 1919–1920 to 1927–1928, Inclusive *

Year	I	II	III	IV	V	VI	VII	VIII
	Current value of all capital invested in agricultural production †	Total gross income from farm production, ‡	Net income (gross income less wages, operating costs and taxes) §	Per cent of return on all capital invested (III divided by I)	Farm-hand wages per year without board ¶	Per cent of return on all capital invested after deducting farm-hand wages for proprietor's labor (III less V divided by I)	Net income (III) less farm-hand wages (V) less $500 as wages of management, with farm family food and fuel estimated at double farm values) ǁ	Per cent of return on all capital invested (VII divided by I)
1919–1920	$12,322	$2,438	$1,634	13.3	$681	7.7	$901	7.3
1920–1921	11,370	1,969	1,042	9.2	781	2.3	172	1.5
1921–1922	9,943	1,436	794	8.0	523	2.7	103	1.0
1922–1923	9,770	1,619	966	9.9	505	4.7	300	3.1
1923–1924	9,468	1,767	1,049	11.1	561	5.2	357	3.8
1924–1925	9,376	1,884	1,145	12.2	567	6.2	443	4.7
1925–1926	9,393	1,993	1,219	13.0	574	6.9	544	5.8
1926–1927	9,193	1,912	1,144	12.4	586	6.1	466	5.1
1927–1928	9,236	1,937	1,169	12.7	584	6.3	470	5.1

* Data for this table taken from *Crops and Markets*, July, 1928.

† As of Jan. 1, in the period indicated: values include land, buildings (dwellings and other), livestock, implements, machinery, motor vehicles, and an allowance for cash working capital. Table 3, column 1, p. 268.

‡ Gross value of farm production less value of products fed, used for seed, and wasted. Table 1, column 3, p. 267.

§ Wages to hired labor, operating costs and taxes on operator-owned investments. Table 7, columns 2, 3 and 4, p. 269.

¶ Farm wages without board, monthly rate multiplied by 12, calendar year. Table 6, column 2, p. 269.

ǁ Double the value of food and fuel consumed on farms. Table 1, column 4, p. 267.

Table 2 is like Table 1 except that rents paid landlords and interest paid on mortgage debt are added to expenses, and value of rented farms and equipment and mortgage debt are subtracted from value of farm property. The results are thus operators' returns on operators' property or equity in property.

Table 2.—Gross and Net Income per Farm and Rate of Return on Operator's Capital Invested for the Crop Years 1919–1920 to 1927–1928, Inclusive *

Year	I Current value of operator's net investment in agricultural production †	II Total gross income from farm production ‡	III Net income (gross income less wages, operating costs, taxes, interest and rent) §	IV Per cent of return on operator's capital (III divided by I)	V Farm-hand wages per year without board ¶	VI Per cent of return on operator's capital invested after deducting farm-hand wages for proprietor's labor (III less V divided by I)	VII Net income (III) less farm-hand wages (V) less $500 as wages of management, with farm family food and fuel estimated at double farm values ||	VIII Per cent of return on capital invested (VII divided by I)
1919–1920	$7,299	$2,438	$1,246	17.1	$681	7.7	$513	7.0
1920–1921	6,400	1,969	685	10.7	781	−1.5	−215	−3.4
1921–1922	5,409	1,436	514	9.5	523	−0.2	−223	−4.1
1922–1923	5,361	1,619	682	12.7	505	3.3	16	0.3
1923–1924	5,174	1,767	766	14.8	561	4.0	74	1.4
1924–1925	5,112	1,884	854	16.7	567	5.6	152	3.0
1925–1926	5,148	1,993	922	17.9	574	6.8	247	4.8
1926–1927	5,023	1,912	861	17.1	586	5.5	183	3.6
1927–1928	5,088	1,937	886	17.4	584	5.9	187	3.7

* Data for this table taken from *Crops and Markets*, July, 1928.

† Total capital invested less property rented from non-operators and debts owed non-operators. Table 3, column 2, p. 268.

‡ Gross value of farm production less value of products fed, used for seed and wasted Table 1, column 3, p. 267.

§ Wages to hired labor, operating costs and taxes on operator-owned investments. Table 7, columns 2, 3 and 4, p. 269.

¶ Farm wages without board, monthly rate multiplied by 12, calendar year. Table 6, column 2, p. 269.

|| Double the value of food and fuel consumed on farms. Table 1, column 4, p. 267.

These results more nearly describe actual farm operators' returns.

The final results in column VIII in Table 2 mean that if in 1927 to 1928 the proprietor was allowed $1,084 for his wages of labor and management, and the food and fuel which his family obtains from the farm were valued roughly on an urban basis, there would be left a 3.7 per cent return on the proprietor's farm investment in 1927–1928. The comparable figure for 1921 to 1922 would have been —4.1 per cent; for 1925–1926, 4.8 per cent. The decline in land values has been a major factor in the rising rate of return since 1921 to 1922.

It must be kept clearly in mind that the foregoing is not intended as an accurate statement of returns on farm investments for purpose of comparison with urban returns. There are too many items in such a statement that have not been compared. For example, no allowance has been made for family labor, on the one hand, and none for use of dwelling and automobile, on the other. In addition, there are many other items that cannot be compared at all.

A similar difficulty enters when one starts looking for data on returns on urban investments for purposes of comparison. The rates of earnings on industrial common stocks in the past 2 years have declined from around 6.2 per cent to around 4.3 per cent of their market value at the time. Of course, some large gains have been realized from rise in their values. Railroad stocks returned dividends ranging around 5.4 per cent at the beginning of 1927 and 4.7 per cent last November-December.[17] Large salaries were taken out before these dividends were voted. None of these investments is very closely comparable with those in agriculture. What we should have instead is data on the returns of the 180,000 small industrial plants, the 1,329,000 retail dealers, and the like.

It is also highly important to bear in mind that returns in urban industry have been very uneven. While a number of the leaders have earned large dividends, there have been nearly as many others that have not.

It is customary to compare incomes of farmers with those of city workmen. As already indicated, these are scarcely comparable social groups. The farmer is to be compared with the small business man of the city—the retail merchant; or with the city man with a trade—the carpenter or plumber; or with the city man with a profession—the small city lawyer, doctor, or teacher. Nevertheless it is of some consequence that weekly earnings of New York factory workers are now 135 per cent above their prewar level, whereas gross incomes of farmers are only 70 per cent above prewar (Chart 2); that these same weekly earnings are now appreciably higher than in 1919 to 1920, whereas net cash incomes of farmers (Chart 2) are now at only 60 per cent of their 1919 to 1920 level. Reducing these latter to a real income basis by dividing each by its appropriate index of the cost of living would make the comparison as follows: New York factory workers, 30 per cent above 1919 to 1920; farmers, 16 per cent under 1919 to 1920. Wages of farm hands in 1928 were 25 per cent below 1919 to 1920 in cash, but 5 per cent above in purchasing power at the farm. As usual, wages of farm labor partly reflect farm incomes and partly reflect city wages.

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[17] *Indexes of the Investment Research Corporation,* Detroit.

If 4.5 per cent is allowed as a proper return on the 1927 to 1928 farm investment, the income in column III above leaves $753 as average return to the proprietors for wages of labor and management. It would be $657 for the same year if figured out on the basis of Table 2. The National Bureau of Economic Research, the Commission on Agricultural Inquiry, the National Industrial Conference Board, and others have compared these or some similar figures directly with earnings per person engaged in cities. Such data computed from year to year may serve as a rough measure of change in relative income over a short period; but they will never serve as an absolute measure of difference in well-being in any one year. One must know in addition what the farm incomes actually buy in the way of housing, food, clothing, fuel, house furnishings, medical and dental care, education, recreation, use of automobile, in comparison with what the city incomes actually buy of these same things or their nearest equivalents. Such comparisons are difficult to make. Take housing as an example: Is an eight-room house on a farm with all modern conveniences the equivalent in living value of a similar house in a good residence district in town? Is a house without a furnace and water system worth no more relatively in the country than it would be in the city? Even in the matter of food, there are difficulties: urban families do not ordinarily consume so many calories as farm families of the same size. To offset this, farm families need less of expensive clothing. Except in the essentially submarginal agricultural regions, the great majority of farm families have automobiles. In the form in which the income calculations are made, the upkeep and maintenance of the automobile is provided largely by the farm end of the business. The cost of owning and operating an automobile in the city may be conservatively estimated at $400 a year. Probably a larger part of urban use than of rural use of automobiles is for the family and household; but one cannot be sure of this.

In a comparison of rural and urban living made in Minnesota in 1924, the value at nearby city prices of the food supplied by the farm to 357 farm families was approximately $700. The rent of an equivalent city home would have been at least $600. The saving in fuel, clothing, water, gas, light, telephone and carfare, either as a result of having these furnished by the farm, or from not having them, would have been at least $300. These families spent an average of $939 on food, clothing, house furnishing and the like purchased in town. Counting the automobile and garage at $400, this makes a total of at least $2,939 that the farm families would need if they moved to the city. That part of the saving of $300, which came from not having all the things that city people have, cannot all be cast aside. Some are not needed on the farm, or are offset by other advantages. On the other hand, some things, such as heat and lighting, that country people need as much as city people, cost more in the country.

Such comparisons, however, are not of great use. There are too many intangible values involved—the advantages of living close to good schools, churches, doctors, hospitals, theaters, libraries, vs. the advantages of clean air, more sunlight, and more quiet. The least that anyone who broadcasts figures purporting to show the relative well-being of farmers and urban people can do is to list carefully all of their omissions and qualifications and possibly make some sort of a rough evaluation of them.

No doubt Minnesota farmers live better than the average for the whole United States. But, on the other hand, the average figures for the whole United States misrepresent the situation. A considerable part of the apparently low average income of agriculture is a simple matter of geography. In Table 3 following, which uses the per-capita incomes computed for 1918 by the National Bureau of Economic Research, assuming these to be of value for comparisons, it appears that 52 per cent of the farming population live in 14 Southern states where all incomes are relatively low, whereas 80 per cent of the non-farming population live in the remaining states where all incomes are relatively high. If such a comparison was made for any one Southern state or any one Northern or Western state, the difference in per-capita incomes would be much smaller, and would disappear in a number of states.

Table 3.—How Distribution of Population Affects Average Farming and Non-farming Incomes—Based on Income Data for 1918 of National Bureau of Economic Research

	Fourteen Southern states	Rest of the United States
Per-capita current income of farm population..	$260	$470
Per-capita current income of non-farming population..............................	570	760
Percentage of the farm population of the United States.................................	52	48
Percentage of the non-farm population of the United States..........................	20	80

All comparisons of per-capita farming and non-farming incomes must furthermore take account of the fact that there are more children in the country than in the city. The exact figures are: For every 1,000 persons in the city between the ages of 20 and 44, there were 648 children under 15 years of age in 1920; for every 1,000 in the rural districts in the same age groups, there were 1,205 children under 15 in 1920. Children under 15 contribute little to income even on the farm.

If one were satisfied with a comparison of farming and non-farming incomes in terms of all adult workers in city and country and for the same geographic units, agriculture would not appear at much disadvantage in the years 1918 to 1920 if the two incomes were reduced to terms of what they were able to buy in the goods and services that constitute living. Those who try to prove the contrary are insulting the agricultural population of the United States. If our population of farm people continued on farms with average real incomes as low as they are made to appear by the data published by the National Bureau of Economic Research, the Industrial Conference Board, and others, most of them would properly be called "boobs" and "ignoramuses." And they are not that. Most of them, instead, are small business men working to make a good return on their investments and to improve their financial status.

CAUSES

Much has already been written as to the reasons for the condition of agriculture since 1920, and it is not our intention to repeat it. Most of it has related to the depression which began late in 1920 and largely ended in 1924 so far as agriculture is concerned. What needs to be explained now is why the new level which has been established since 1924 and 1925 is as low as it is, and leaves agriculture so much out of line with urban industry and trade.

The depression itself behaved with respect to agriculture rather much according to pattern. In the deflation which follows a period of inflation, agriculture participates as follows: First, agriculture cannot shut down or operate on a part-time basis, so that it floods the market with raw materials which industry does not want. This especially affects cotton and wool. Second, due to unemployment in cities, consumption of the more demand-elastic of farm products (such as butter, eggs, fruits and fibers) falls off. Third, there is, under such circumstances, a big carry-over of farm products which keeps the markets overstocked for perhaps 2 or 3 years in extreme cases. This will be especially pronounced if agricultural production has been expanding previously. Fourth, agriculture does not reduce its production appreciably even after 2 or 3 years of such conditions. Farmers who are out of debt and in comfortable circumstances do reduce the scope of their operations and turn to crops involving less labor and expense per acre. But there are fully as many others who feel the need of doing the opposite in order to make ends meet. Fifth, margins taken by middlemen, having climbed to new heights during the inflation, only slowly are reduced. In the period of early recovery from the inflation, the persisting high margins induce a rapid expansion in the number of retail units, the support of which requires that the high margins continue. Very slowly does competition clear up such a situation. Sixth, transportation rates may have been raised just about the time the depression sets in, and continue at the new level. Seventh, taxes are likely to behave in a similar way. The bonds issued at the preceding high price levels have to be paid off in the low-level periods following. Eighth, under the foregoing circumstances, land values are likely to advance more rapidly just before the deflation and much land is likely to be bought at such time. In the period following some farmers are not able to pay interest on their mortgages, the land market becomes stagnant, and values may even recede in extreme cases, such as the present.

The principal difference between the recent inflation-deflation period and the rest of them is that it has been unusually severe. But it has also been accompanied by a few special circumstances, for the most part growing out of the fact that the World War accompanied it and largely precipitated it. The war made prices of farm products especially high, and caused a larger and more sudden increase in the land in crops. It encouraged the expansion of certain crops, particularly those produced on the Western frontier. The drawing off of the labor supply caused a sudden decrease of man power and the use of more machinery in production. There was, as a result of the foregoing, more of an increase in land values than would ordinarily have occurred during even an extreme inflation. The building shortage raised city rents enormously, and helped hold up middlemen's margins.

Even if there was no great expansion in actual volume of agricultural production, as Chart 2 shows, there surely was in acres in crops. In many ways, this is more serious than in actual volume, because when prices fall with the deflation, it is the low-yielding acres just brought in that are hardest hit. Since these new low-yielding acres are mostly in certain regions, it turns out that some sections of the country suffer greatly. Also, although production may not have expanded much in the aggregate during the war, it did in certain lines—wheat and rye and cotton, for example—and there was a severe set-back in the regions producing these crops. It has already been shown that the difficulties confronting agriculture are to a considerable extent regional. Developments in Europe accompanying and following the war also disturbed our foreign markets for farm products and added another complicating factor.

But all of the foregoing are not adequate to explain the present condition of agriculture. The inflation-deflation aspects of the situation were the strongest influences in 1921–1924. In those years, one can trace most of the above-mentioned movements working out according to the pattern described. Since then, the lines of these movements are blurred or lost altogether. Forces stronger in their nature, some of them of longer standing, have enveloped them.

In the report of the National Industrial Conference Board, these forces are said to have set in about 1900, and the suggestion is made:

> . . . that the decline in the relative position of agriculture since 1900 has been in some way connected with the rapid growth of our distribution and banking system and of taxation rather than with changes in our productive industries or transportation system (p. 49).

In the report of the Business Men's Commission on Agriculture, the suggestion is that a rise in real agricultural costs relative to costs in industry from 1837 to 1914, and a less rapid decline since 1914, is responsible for the continuing low agricultural level. Suffice to say for the theory advanced by the National Industrial Conference Board that it was invented to explain some statistical results relating to the ratio of gainfully employed in agriculture to agriculture's "share of the national income," and some other results relating to the ratio of agricultural costs to prices, which are entirely false, growing out of a misunderstanding or misuse of data, and that therefore the theory has no basis for existence.[18] The theory of the Business Men's Commission, so far as the years from 1837 to 1914 are concerned, is advanced to explain the more rapid rise of agricultural than other prices, for which the more obvious and commonly accepted explanation is a growing relative scarcity of agricultural products. As for the year 1914 as the critical point when prices of farm products ceased to rise along with costs, this is the unhappy result of some glaring misuses of statistical method, consisting of running an 11-year moving average right through the sharp break in prices in 1920 to 1921 (p. 52), and arbitrarily breaking a trend in 1914 that clearly ended in 1920 (p. 50).[19] Dr. Durand's data cited earlier credit agriculture with the same gain as manufacturing in per-capita output between 1900 and 1925. Real costs have probably followed per-capita output very closely. For the years between 1920 and 1925, Dr. Durand credits industry with the larger per-capita gains. There seems to be some foundation for this, up to 1925 at least, in the behavior of prices and land values.

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[18] *Jour. Farm Econ.*, pp. 148–157, April, 1927.

[19] *Jour. Farm Econ.*, July, 1927.

The commonly accepted view is that agriculture took a pronounced turn for the better, rather than for the worse, just before 1900, and continued to improve relatively to industry until late in 1920. There seems to be not the slightest occasion for any other description of events. Previous to 1890, there had been a long period of agricultural expansion, and an accompanying great influx into agriculture of Europeans with relatively low standards of living and of working conditions. As a result, we found ourselves in the nineties flooding the world's markets with products selling at a price that could not support proper living conditions for the rank and file of American farmers. For various reasons a change set in thereafter. Expansion into new areas the world over slackened perceptibly at that time. No important new agricultural inventions appeared. By 1915, in consequence, agricultural and other prices had come much more nearly into proper balance. Would they have come into balance by 1928 if the World War had not come along? Probably not. There were growing signs of a new era of agricultural development, not so pronounced as before, but still significant. The use of more power and machinery on the farm, and keeping more livestock, would have played a larger rôle in it than migration to new areas; but what happened in Western Canada, and what has happened on the western cotton frontier in Texas and Oklahoma, is not to be overlooked. There was even a new impetus given to the settlement of the cutover regions of Wisconsin and Minnesota. The effects of this do not appear in crop production, because yields were somewhat unfavorable at the moment; but the acreage growth was there. The truth of the matter is that the standard of living of the American farmer had not risen rapidly enough to absorb the new gains in income, and these were manifesting themselves in rapidly rising land values, and in reaching out for more land in new areas. Much of what has happened to agriculture during and since the war would therefore have happened anyway; but its order and manner of appearance would have been very different in many respects. Even if the World War had never happened, agriculture would still be out of line with the rest of our nation, although more nearly recovered from such a condition. We had a country-life movement in the Roosevelt period and following which called attention to many of the deficiencies of agriculture and rural living. Many of those deficiencies are still with us.

As the matter now stands, the inclination to expand agricultural production is still with us. A noticeable rise in the price of any product results presently in an enlargement of the output of it, only part of which comes out of the acreage or output of other products. It is true that land is going out of crop use in some areas; but more is coming into use elsewhere. The remaining acres in the older areas are producing better. Our improved skill in feeding that we have painfully learned is for the moment vexing us with more livestock product than we want.

A second persistent factor in the situation is the new wage level for labor. There is no use of our expecting wage rates to fall. A period of pronounced business depression such as some are anticipating within a year or two would produce unemployment, but few wage cuts. It is the history of wages that they rise during inflation periods and then remain nearly at their new levels. Setting up the immigration bars helped keep wages up after 1920. There are those who will argue that industry cannot afford to pay present wages. The income-tax reports do not show it. Neither does the stock market. Some enterprises or industries cannot prosper at present wage levels; but all this means is that they are being outbid for labor by more prosperous enterprises or industries. There is evidence that high wages have hastened the introduction of machinery and have thus thrown men out of work. But this sort of a disease has a way of curing itself presently without significant wage reductions.

Along with the new wage level and the new level of urban incomes generally has come a conspicuously higher scale of living in cities. Its most noticeable effect has been upon the quality of housing demanded. This has provided work for the construction trades and has helped keep up rents.

With salaries, wages, and rents at or near their present levels, and transportation costs not likely to be reduced very much, it is futile to look forward to much of a reduction in spreads between producer and consumer prices.

With agricultural production maintaining itself, and even expanding a little, and wages, rents, freight rates and taxes, holding well up, it is not difficult to see why agricultural prices and incomes have been about on a level for the past 4 years. One other equally persistent new factor in the situation, the new scale of living of farm people, is combining with the others to keep land values from rising, and even to cause them to decline for the present.

PRESENT TENDENCIES

The outstanding feature in the situation so far as the immediate future is concerned is that the readjustment influences normally accompanying a recovery from a depression have largely spent themselves, that the new influences named above are now by far the more potent, and that these have established a new level for agriculture which, although somewhat above the prewar level, is farther below the level in urban industry than was the agricultural level of prewar days. The urban part of our national civilization has not only recovered from the depression of 1920 to 1922, but has advanced even beyond the levels of 1918 to 1920 in profits on capital, in real wages and incomes, and in scale of living. The agricultural part of it has also recovered from the depression, but is still conspicuously below the levels of 1918 to 1920 in everything except the scale of living; and the higher scale of living has been maintained in good part out of capital.

The new level which has been established, however, is not an absolute level. Certain influences of a slow-working type are gradually getting in their effects. The changes that we can expect to result therefrom in the next 25 years, *if no changes are made in our present policy and program with respect to agriculture,* are as follows:

1. An increasing use of machinery and power on farms, and less labor in proportion.
2. An expansion of crop production in those areas where machinery and power can be substituted for labor, and a contraction of agriculture elsewhere.
3. Larger farms, both in acres and in volume of output.
4. Continuing technical improvements in agriculture, better cultural practices, better feeding, better varieties and breeds, etc.
5. An increasing volume of production constantly pressing on consumption, and kept in check by low prices whenever the output of any product

advances too rapidly. This increasing volume will be per acre and per head of livestock as well as per farm and per man.

6. A greater technical intensity of production, in the sense that more fertilizer will be used, more cultivation will be given to crops, more feed will be fed, more sprays will be used, especially on the better grades of land and with the better livestock; but all of this will be done with more power and machinery rather than with more labor. The increased inputs will be of those things which take relatively little labor. Developments along this line will be held in check, like those in output, by prices of farm products. Much poor land will be farmed less intensively even in technical terms.

7. Costs per unit of product will decline because of the substitution of power and machinery for labor, the improvements in the technique of production, and the large inputs of feed and fertilizer, all giving larger outputs per unit of input.

8. Prices of farm products will probably rise, *relative to prices of other products,* but very slowly, probably not 1 point a year on the index scale. This will be due mostly to reduction in the prices of manufactured products accompanying improvements in technique of manufacture and the like. Population growth may also figure in it a little. Whether the general price level declines or falls is another question, and not closely related to the one in hand.

9. Cooperative marketing and other related improvements in marketing will introduce some economies; but whether they will offset the additional costs of closer sorting and grading, better packing, packaging, and of more competitive advertising, is much to be doubted. Spreads between farm and retail prices will probably increase; but the consumer will pay for most of this.

10. There will be an increasingly better adjustment of production to economic conditions, better farm organization and management.

11. Farm incomes will rise, but rather slowly, possibly 1 or 2 per cent a year, due mostly to lower costs and larger production per farm.

12. Incomes per person engaged in agriculture will rise faster than farm incomes, as they have since 1921.

13. Wages of hired farm labor will possibly rise a trifle faster than farm incomes, as they have since 1921.

14. The scale of living of farm families will rise somewhat faster than farm incomes, due to the reduction in the average number of persons on each farm, and small further drains upon farm capital.

15. The population living on farms will continue to decline, but at a slackening rate after a few more years.

16. Land values will continue to decline in the important farming areas, but at a rapidly slackening rate. Once they reach the bottom they will turn upward very slowly indeed.

17. Taxes will continue to rise, although not very rapidly. More roads will be built. Schools will be improved. Better health facilities will be provided for farm people. This is simply a part of the rising scale of living.

18. The higher taxes per acre will make an increasing amount of land submarginal for any kind of agriculture.

19. Mortgages on farm property will probably increase little further in absolute amount for the present. The slackening of the rate of sale of farms has reduced the number of new mortgages that is being written. The increase from 1920 to 1925 was due largely to conversion of notes and chattel mortgages to real estate mortgages. Farmers are retiring to town at a much slower rate than formerly. Owner-operator's equities in their farms will decline still further in the next few years.

20. Tenancy will probably increase in most sections, due to the inability of farmers to provide the funds with which to buy the larger acreages needed. The lower land values, and the lower rate at which farmers retire to town, will be offsetting influences, which may prove to be the more potent.

21. There will be more families which combine farming with other means of livelihood; and more city people will have homes in the country.

The foregoing developments will work out differently in various sections. In the East, mixed farming and country homes will figure largely; and the growth of cities will provide higher-priced local markets. Land values may rise fairly rapidly in many localities. Farther back from the cities, however, agriculture will continue to decline.

Developments in the South are hard to forecast because of the uncertainty as to the success of cotton-picking machinery. It seems safe to say that larger farms will develop in many sections. The industrialization of many sections, and building of roads, will start the rural population flowing out of one submarginal area after another; and in 25 years, certain parts of the South will have passed into an agricultural stage such as prevails in some of New England today.

In the corn belt, the major change will be larger farm family units; likewise in the wheat belt. Farther west, the use of machinery will make profitable the cropping of more of the semi-arid land; and more of the ranges will be cut up into farms combining crops and livestock.

There is no provision in the foregoing analysis for an agricultural recession carried too far, with accompanying exorbitant prices for farm products, followed by expansion again—as some have predicted. It seems more reasonable to expect the foregoing changes to proceed gradually, and to ease off gradually if and as fundamental conditions of supply and demand for farm products change. The mass of agriculture is so large, and there are so many varied elements in it, that it is hard to conceive of it as moving as one solid ball. The history of our agriculture in the past seems more plausibly written in terms of a succession of influences acting upon it than in terms of a theory of action and reaction.

Nor is there any suggestion that our farmers are rapidly approaching an economic and social condition such as prevails among the small holders of Europe—as many alarmists have asserted. In fact, the whole trend is in the opposite direction. With such freedom of movement of population between city and country as has already developed, and is still further developing, it is difficult to conceive of such a discrepancy between farm and urban conditions as the foregoing would involve. A small-holding type of agriculture is the counterpart in the country of a low wage level in the cities—even in Europe. At least no one has yet demonstrated that farm people in Europe generally have fallen seriously behind equivalent social groups in the cities in incomes and living conditions. There is evidence for some sections of Europe that the tillers of the soil have advanced their plane of living in the last hundred years more than have the factory workers.

But another phase of this problem becomes important at this point. If migration from the land to the cities goes on very rapidly, as in some parts of the East in the last 50 years, it may take about all the young people—all but those that are too poor or too weak to move—and leave only the old and the incompetent on the land. The agricultural laborers left behind in places in Europe have been of such description. This matter will be discussed in a later chapter.

CHAPTER II

THE PLACE OF AGRICULTURE IN THE NATIONAL ECONOMY

Our next step will be to decide upon the place which agriculture should hold in the national economy. This is in large part determined for any nation by the resources with which nature has provided it; but is also subject to a measure of human control. It is to the differences that can result from various policies that we shall address ourselves in this chapter.

THE RURAL-URBAN BALANCE IN THE UNITED STATES

In January, 1928, approximately 23.3 per cent of the population of the United States was living on farms. In January, 1925, the comparable figure was 25.3 per cent; in January, 1920, 29.9 per cent; and in April, 1910, 34.8 per cent. The 1920 figure is the most dependable of these. No general population census has been taken since 1920. The "farm population" was counted in 1925 on about the same basis as in 1920, but there was no general population census. The farm population for 1910 is an estimate made by Leon Truesdell of the Census Bureau, for the most part on the basis of the population count outside of cities and villages. The 1928 estimate is on the basis of the 27,794,000 farm population estimated by the Bureau of Agricultural Economics, and the 119,320,000 total population estimated by the National Bureau of Economic Research on the basis of birth rates, death rates and immigration and emigration statistics.

Back of 1910, it is possible to trace the progress of urbanization only in terms of "rural" and "urban" as defined in the censuses of that period. Table 4 shows that from 1880 to 1920, the percentage of population which is urban increased an average of 5.6 per cent each 10 years. The population in "other rural territory" was only 40.1 per cent of the total in

1920, as compared with 57.0 per cent in 1890.[1] In absolute numbers, the urban population increased during the period from 27,000,000 to 63,000,000, or 134 per cent, while the rural population increased only from 35,900,000 to 42,400,000 or 24 per cent. From 1890 to 1910, the rural increase was 3,400,000; from 1900 to 1910, 2,300,000; from 1910 to 1920, only 800,000. The strictly farm population, as above indicated, actually decreased in this decade. While the rural rate of increase was declining, the urban rate of increase was rising, from 8,000,000 between 1890 to 1900, to 12,100,000 between 1910 and 1920.

TABLE 4.—SHIFT IN POPULATION OF THE UNITED STATES FROM RURAL TO URBAN, 1890 TO 1920 *

	Percent of total population			
	1920	1910	1900	1890
Cities of 2,500 or over	51.4	45.8	40.0	35.4
Incorporated places of less than 2,500	8.5	8.9	8.3	7.6
Other rural territory	40.1	45.3	51.7	57.0

* *Abstract of the Census*, p. 74.

Taking the period from 1850 to 1920, the shift from urban to rural (counting as urban the population in places of 2,500 and over) was at the rate of 4.5 per cent each 10 years. But for the last 20 of these years, the rate was 5.7 per cent each 10 years, and for the last 30 of them, 5.1 per cent, as compared with 4.0 per cent for each 10 years from 1850 to 1890. Since 1920, on the new farm population basis, the shift has been at the rate of 8.0 per cent in 10 years, as compared with 5.1 per cent from 1910 to 1920. Thus the rate of urbanization is plainly accelerating. How far this shift will go is surely one of the most important questions confronting the nation.

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[1] A large number of the people living in "other rural territory" are not engaged in farming, but are city people living near to cities, or are engaged in small rural manufacturing enterprises, such as butter making, cheese making, cotton ginning, or in industries like mining, quarrying, or lumbering which are often carried on in a small way in the rural districts, or are merchants in small villages or at cross-roads points. If these and other similar groups are taken out of the 40.1 per cent, only 29.9 per cent are left. This figure is to be compared with the 26.3 per cent of all gainfully employed persons in agriculture. The reason that a larger percentage of the population than of the gainfully employed persons is reported for agriculture is that the ratio of children to gainfully employed persons is much larger in the country than in the city, partly because of the higher rural birth rate, partly because so many young people migrate to our cities about as soon as they are old enough to go to work, either from our own farms or from farms in other countries. Immigrants are nearly all wage-earners, and nearly all of them go to work in the cities (see "1920 Census," Vol. IV, p. 34; Vol. V, p. 894).

Considering the changes by areas throws some light on the question. Table 5 shows the shift from rural to urban between 1910 and 1920 in a number of typical states. The greatest increases in percentage of urban population were in Michigan, Ohio, Illinois, and the other East North Central states. Many sections of these states are being rapidly industrialized. The New England states taken as a whole increased only 2.8 in percentage of population which is urban. This is because they were already very largely urban in 1910. The same situation prevails in large measure in the Middle Atlantic states. The Southern group of states, on the other hand, increased 5.3 per cent in percentage which is urban. Many sections of some of the Southern states are also being rapidly industrialized.

TABLE 5.—SHIFT OF POPULATION FROM RURAL TO URBAN IN TYPICAL STATES, 1910 TO 1920

States	Percentage urban *	
	1920	1910
Massachusetts	94.8	92.8
New York	82.8	78.8
Ohio	63.8	55.9
Michigan	61.1	47.2
Iowa	36.4	30.6
Minnesota	44.1	41.0
North Dakota	13.6	11.0
Kansas	34.9	29.2
California	68.0	61.8
Maryland	60.0	50.8
South Carolina	17.5	14.8
Alabama	21.7	17.3
Texas	32.4	24.1

* In this table, the population of incorporated places of less than 2,500 is classed as rural.

THE RURAL-URBAN BALANCE ABROAD[2]

It is also significant to compare the foregoing data with those of certain foreign countries, as in Table 6. These data must not be taken as at all accurate. The censuses of different countries are not taken in the same way, and it is not easy for an outsider to find out how to interpret them properly. But no doubt the data in the table are roughly comparable. For most countries, percentage gainfully employed is a better measure of the importance of agriculture than percentage of rural. The reason for this is brought out in the case of England and Wales. If only 78 per cent of the population of

TABLE 6.—PERCENTAGE OF POPULATION URBAN, AND PERCENTAGE GAINFULLY EMPLOYED IN AGRICULTURE *

	Population per square mile	Percentage urban	Percentage gainfully employed in agriculture
Belgium	636	44	22
England and Wales	649	78	7
Japan (proper)	395	40†	....
Italy	329	40†	55
Germany	328	65	35
Switzerland	243	25	26
Denmark	192	41	44
France	184	46	41
India (total)	177	11	71
Ireland (old)	134	34	43
China	102	25†	....
United States	35	51	26
Sweden	34	26	40
South Africa	15	25	59
Australia	2	63	22

* From a study made by Carl R. Arnold under direction of the author. Data are for nearest census year.

† Estimates based on scanty information.

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[2] See the author's "Production Economics," Chap. III, for further discussion of this topic. Henry Holt & Company, New York, 1926.

England and Wales is urban, then 22 per cent must be rural. But only 7 per cent are reported as engaged in agriculture. Many people in England and Wales live in the country, but work in adjoining cities or mines. This is almost equally true in Belgium, Germany, and other countries on the continent. On the other hand, in southern Italy and some other portions of the continent, many farm families live in small cities and travel to and from their farms daily. Only three countries, Belgium, England, and Australia, have a smaller percentage of their workers engaged in agriculture than the United States. Belgium produces only 60 per cent of its food supply, and the United Kingdom only half of its food supply. Germany with 35 per cent of its workers engaged in agriculture produced only 90 per cent of its food supply before the World War, and France only 93 per cent of it. The United States is able to produce all its agricultural products with so few workers, partly because it has a large area of relatively fertile agricultural land per capita, and partly because its workers use so much horse labor and farm machinery. Australia, a still newer country than the United States, shows the same effects in even more pronounced form. In the countries with greater density of population, the work on farms is much more largely done by hand and many more farm workers are needed per capita of the total population.

The more machinery that is used on farms, the more workers who must live in cities and make it. Also the higher the scale of living of a people, the larger the percentage of the income that is spent for goods of the sort that are manufactured in the city. These are two additional reasons that so few people, relatively, live on farms in countries such as the United States and Australia.

Let us now study several of these countries in more detail. Let us take first a highly industrialized country, like England. In an area not quite so large as Illinois, England (not including Scotland and Wales) supports a population of 36,000,000, nearly six times that of Illinois. This represents a density of population of 701 per square mile, as compared with 35 for the whole United States, 566 for Rhode Island, 479 for Massachusetts, 141 for Ohio, 43 for Iowa, 9 for North Dakota and 4 for Montana. The working population is distributed between industries roughly as follows: industrial (including mining and transportation), 58 per cent; commercial, 14 per cent; domestic, 13 per cent; agricultural and fishing, 8 per cent; professional and government and defense, 7 per cent. The rural population alone represents a density of 160 per square mile. Excluding those living in the country but not engaged in agriculture, would still leave a degree of labor intensity in agriculture much greater than maintains in the United States; but even this does not feed and clothe the large industrial population of England. Large quantities of food are, therefore, imported in exchange for the manufactured products sold. The raw materials of many of her manufactured industries, particularly of her textile industry, likewise have to be imported. Her rich coal and iron deposits located in close proximity to each other have been and still are an important factor in her industrial development. Closely associated with this industrial development, although antedating it in importance, is England's ocean shipping and foreign commerce.

Let us take next a new country, one still newer than the United States. Australia was first colonized in 1788, a century and a half later than the United States. It has an area almost exactly the same as that of the United States, but a population of only 5,400,000, less than 2 per square mile. Australia has developed rather slowly compared to the United States, partly because it is farther from Europe, partly because it has few harbors and navigable rivers, and partly because a large part of it is arid or semi-arid and lies in the hot torrid zone. Only about 15,000,000 acres of land are cultivated annually, as compared with 350,000,000 in the United States. The continent is rich in minerals, and 4 per cent of its income in 1920 was from that source. Agriculture represents slightly over half of the national income, and forests and fisheries 3 per cent. This means that about 60 per cent of the national income is from the extractive and genetic industries, as compared with probably about 30 per cent for the United States. In 1921, Australian manufacturers were employing only 387,000 persons, as compared with 12,818,000 in the United States. As time goes on, more of the population will be engaged in manufacturing and less in agriculture. Even between 1911 and 1921, the working population of Australia shifted from 28.4 to 31.2 per cent industrial, and from 30.4 to 25.8 in extractive and genetic industries.

Let us next pass to a very old country, but one which is still highly agricultural, namely India. Here 71.9 per cent of the people obtain their living by agriculture, as compared with less than 40 per cent in the United States. Probably 90,000,000 persons are gainfully employed in agriculture as compared with 11,000,000 in the United States. The land area of India is a little less than two-thirds of that of the United States. The density of population of the whole country is 177 per square mile; of the British province alone, 225 per square mile. About one-seventh of the land area is in forests, and about one-fifth in crops. The comparable fractions for the United States are one-fourth in forest and one-sixth in crops. Much of the interior of India is arid or semi-arid. What land is cropped is intensively farmed; 21.5 per cent of the cultivated land of India is irrigated. More rice is grown than all other crops combined. Wheat and cotton are next in importance. Although the census of occupations indicates that 6,000,000 or 7,000,000 families are earning their living from manufacturing industries, the census of manufactures reports only 4,827 establishments employing 50 persons or over. Industry in India consists mostly of hand trades, such as weaving, wood carving and metal working.

The country of Europe which is most like India in balance of industries, is Spain. Over three-fifths of the workers of Spain are in agriculture, and only one-eighth in manufacturing. Fruit growing, relatively very important in Spain, is an intensive type of agriculture. Much of the interior has rather scanty rainfall. Wheat and barley are the principal field crops; sheep and goats the principal kinds of livestock. The sheep population of Spain is practically the same as its human population, and there are one-fifth as many goats as sheep. The manufactures are textiles mostly. The mines employ 1 per cent of the workers. The density of population in Spain is 109 per square mile.

France is much more industrial than Spain, but is still more of an agricultural than a manufacturing nation. Only 46 per cent of the population is urban, as compared with 51.4 per cent in the United States. Manufacturing has been handicapped in the past by a lack of coal. The principal manufacturing industries are textiles and woodwork—nearly two-fifths of the industrial workers are employed in textile factories of one kind or other. Nearly one-fourth of the land is in crops. Wheat, oats, and potatoes are the principal field crops; but as much land is devoted to grapes as to potatoes. France has one head of cattle for every 3 in population, as compared with one for every 1.7 of population in the United States. The density of population is 184 per square mile.

Belgium with an area one-fifth that of Illinois has a million more population. Its density of population is 636 per square mile. Over 45 per cent of the land is in crops, but large quantities of food have to be imported. Belgium is a highly industrialized nation like England. The principal manufactures are iron and steel, glass, automobiles, artificial silk, linen, and hand-made laces. The country has a supply of coal to support heavy industries, like iron and steel, and an abundance of labor to support textiles and hand industries.

Denmark, in contrast to Belgium, is largely an agricultural nation. In 1921, 59 per cent of the population was classified as rural, as compared with 48.6 per cent in the United States. Notwithstanding the fact that only about 350,000 are employed in factories, the density of population is 192 per square mile—slightly more than that of France. This is probably accounted for by the fact that Denmark's agriculture is of the intensive livestock type. In 1922, Denmark had 1 head of cattle for every 1.3 of the population, as compared with 1.7 for the United States; and in addition 1 head of swine for every 1.7 of the population, as compared with 1 for every 1.9 for the United States. To feed all this livestock, considerable feed has to be imported. The exports are principally butter, eggs and bacon. Danish fisheries are also of considerable importance.

Sweden has been in the past predominantly a rural nation. In 1849, only 11 per cent of its workers were engaged in manufacturing. But at present almost half are in industry. Having a large supply of iron, but only a little coal of its own, Sweden exports a large quantity of raw iron ore. The census classification of population is 70 per cent rural, but this figure is somewhat deceiving, since many of the industrial workers live in the country. This is possible because manufacturing is largely decentralized. Much of it is based upon the products of Sweden's well-managed forests. Nearly 60 per cent of the whole area of Sweden is in forest. The other important manufactures are machinery, electrical equipment, porcelain, and glass. Less than 10 per cent of the land is cultivated. The density of the population is 34 per square mile.

If the United States ever became as densely populated as Belgium or even France, it would have a larger agricultural population than now, and possibly even a larger percentage of its population would be living on the land. Its mineral resources are enormous; but so are its agricultural resources, and as the population grew, it would find its land being farmed more intensively mostly by means of machinery, power, and fertilizer, but also to some extent in terms of labor, for there are many operations on the farm which cannot be reduced to a machine basis. But no increase in density would produce a balance of population in the United States such as exists in India and China, for these countries either have not the coal and iron and other minerals to support manufacturing, or they have not developed them.

New countries like the United States, Canada, and Australia, that have minerals and timber as well as fertile lands, tend to expand industrially at a very early stage, almost as early as agriculturally. Fortunes are to be made from the exploiting of these resources. At a somewhat later stage, when the timber is gone, and the best of the minerals, agriculture may come to receive more attention again, especially if the world reaches a stage where food and textiles are scarcer in proportion to the population.

The Industrial Revolution came to the United States while it was still sparsely populated, and it found the minerals, water-power and timber resources necessary for its progress. It came to the Orient and to much of Europe after the population had expanded close to the subsistence point, with capital scarce and slow to accumulate, and hence made slow headway. It has only recently made a good start in Russia and Italy.

AGRICULTURAL POLICY

How much more will the agricultural population of the United States decline? This will largely depend, in the next few decades, upon the relative efficiency of our agricultural and urban production. If our manufacturing maintains the advantage which it now enjoys in many lines over foreign manufacturing, our cities will keep on growing faster than the country. Efficiency in agriculture has two opposing effects on rural population: on the one hand, it reduces the number of workers required, and on the other, it enables the agriculture of a nation to compete more successfully with foreign agriculture. The net effect in most cases is to reduce the number of agricultural workers relatively. It is therefore entirely reasonable to expect the percentage of agricultural workers to decline below the probable 22 per cent at present. If cotton and corn are ever harvested successfully by machinery, the percentage will decline much below 20 per cent. And this without importing a larger percentage of our agricultural products than at present. If we were to become a great food-deficit nation, the percentage could decline even to England's 7 per cent. But there is little chance that this will ever happen to the United States. It has too large a proportion of the fertile land of the earth within its borders for that.

Changes of the same sort as the foregoing are taking place in other parts of the world. Even in Europe, farm machinery has been replacing hand labor. The cityward trend has been almost as pronounced in Denmark as in the United States during the past 50 years. But obviously it will not be possible to support the dense populations of most of these countries without supplementing machinery with a great deal of hand labor. In general, only an increase in efficiency of production faster than the increase in population can make possible a rapid urbanization. Any country rich in coal and iron which is content to import its food, will find its cities growing rapidly.

It follows from the above that the policy which a nation adopts with respect to its agriculture may have an important influence in determining its importance. What has been the policy of the United States with respect to its agriculture in the past? With a view to determining this in an authentic manner, the author with the assistance of his graduate students undertook the task of scanning from this point of view our political history for the past 75 years, and in particular, of reading the messages of the presidents and reports of the commissioners or secretaries of agriculture since 1845. The results of this study are summarized under three heads: *positive, negative,* and *other* influences.

Positive Influences.—1. Vigorous encouragement of the rapid settlement of our public lands, by liberal sales and homestead policies, by grants of land to railroads, by public irrigation projects, etc.

2. Further attempts to exploit our agricultural resources fully by introducing all manner of new plants and animals, or new varieties or breeds, that might thrive in this country. Important examples of successful introductions are alfalfa, durum wheat, pima cotton, and probably sugar beets. The Secretary of Agriculture in 1863 listed 40 farm products not grown in the United States. All of which should probably be grown here. Included in the list were tea and coffee. All were probably tried one time or another. The first distributions of tea plants were made in 1859. In 1860, 32,000 plants were distributed. Between 1876 and 1885, $28,000 were spent upon a government tea farm. As late as 1898, Congress appropriated $1,000 for experiments in tea culture. In 1900, Secretary James Wilson stated that tea could be grown for 15 cents a pound in the United States, and sold at 30 cents, making a profit of 100 per cent. As late as 1904 and 1905, Secretary Wilson was still urging tea and silk culture. The first mention of sugar beets was in 1864, in a statement that we were paying $100,000,000 annually for imported sugar, and could grow it from sugar beets ourselves at one-half that cost. Sugar beets were pushed hardest in the days of Secretary Wilson. In 1927, sugar from beets represented only one-sixth of our total consumption, and this with a tariff equal to more than half its price.

3. Constant effort to check diseases and pests of plants and animals, to develop new breeds and varieties, improve cultural methods, etc. The report of the first commissioner of agriculture in 1848 stated that one purpose of his department was "to make two blades of grass grow where one grew before."

4. Encouragement of, first, education in agriculture, then research, then extension. Few countries have done more of these things, even in proportion to their size, than the United States.

5. Only recently, mostly in the last 15 years, development

of marketing services of all kinds, including inspection, grading, market news, etc. Also research in the field of marketing, and recently some encouragement to cooperative marketing.

6. Developing foreign markets for farm products. This was an important activity in the days when American products were being discriminated against in Europe, and has become important again of late.

7. Within the last 12 years only, improved credit facilities for agriculture.

8. Since Harrison's administration, tariffs on some farm products, frequently without regard to whether they would be effective or not. The Democratic party has usually removed these duties or lowered them when in power.

9. Unrestricted immigration until recently, which greatly hastened the development of our agricultural area from 1840 to 1900, particularly.

10. Recently, greatly improved mail and road facilities.

11. Promotion of industry, while decreasing the percentage of the population which is rural, has increased it absolutely.

Negative Influences.—Following is a list of policies which have had an opposite effect on agriculture:

1. Heavy import duties on manufactured products. No nation has ever gone in for stimulating urban industries on so vigorous a scale as has the United States. The duties now generally average around 40 per cent of the value of what few manufactured goods are imported. Coupled with this, most raw materials of manufacturing have come in duty free, even though they compete with domestic farm products in some cases. Hides, and Egyptian staple cotton are cases in point. All of this was done in the beginning to give our infant manufacturing industries a chance to get started. We were a largely agricultural nation, and thoughtful people agreed that we would all be better off if we diversified. But we allowed the infant to grow so strong that it has overmastered us. The effect has been to penalize agriculture by making farmers pay higher prices for what they buy, while the protection they are receiving on their farm products is adding little to offset it. The protected industries take labor away from the unprotected ones and the exporting ones, until only the more efficient units of these are left producing. The farmers who are near the margin

are crowded out just as are the marginal city producers in unprotected industries. More of them do without hired labor and farm less intensively. Our attention is frequently called to the fact that our middleman margins are about the highest in the world. The middlemen tell us that their margins are high because their costs are high. These are high because middlemen must compete with protected industries. The same analysis applies to railroad rates. This, of course, is merely one of the ways in which a manufacturer's tariff subsidy is in considerable part shifted to agriculture.

The whole effect of this set of circumstances is a considerably smaller volume of agricultural production and agricultural population than we otherwise would have, and also as will be explained later, lower farm incomes and rural standards of living.

2. During this same period of increasing protection for city industries, tremendous incentives to rapid exploitation of our rich mineral and timber resources. No other nation has ever cast its natural resources as wantonly as we to the first comers. We did have a few rules or laws supposed to regulate such matters, but until Theodore Roosevelt came along with his ''big stick,'' nobody gave much heed to them. The raw materials of this exploitation gave us the means wherewith to underbid the world with our products.

3. Incidently, the rapid depletion of our forests gave us a vast area of cutover land now lying desolate or turning slowly into second growth, and supporting no population whatever, which if developed slowly and wisely would have supported a considerable population that would have combined farming with timber work.

4. Transportation rates in this country have probably been made to favor large established city centers at the expense of small centers. A system of rates set up on the basis of decentralizing industry would probably also give us more people living on the surrounding farms.

5. Our liberal corporation laws, permitting an almost limitless amount of capitalization of expectations and stock watering, have stimulated city expansion. The very corporation itself, even if kept rigorously within the proper bounds, is a great

incentive to city enterprise. The farming type of business has nothing to equal it. The corporation is not suited to it.

6. Our tax system has in effect subsidized industry and commerce at the expense of agriculture. Professor Warren in his "Agricultural Situation" takes the following figures from the reports of the National Industrial Conference Board, a manufacturers' organization:[3]

PERCENTAGE OF INCOMES PAID AS TAXES

	1913	1919	1922
Farmers	10	8	14
All others	6	13	11

With the further reduction of income taxes that has come since 1922, and the rise in city incomes, the percentages by now are about back to their 1913 relationship. The farmers will continue to bear more than their share of taxes until more of them can be collected as other than general property taxes.

7. Probably after 1860, unrestricted immigration favored city growth more than it did country growth, since more of the immigrants remained in the cities.

8. Lastly, in a period when urban industry is being consciously stimulated, and it is responding splendidly to the treatment, all eyes are focused upon it, and agriculture is neglected. It is assumed that it can take care of itself, and this assumption continues long after the fact.

Other Influences.—Let us under this head include some influences which are not in themselves matters of policy, but which nevertheless have been adverse to agriculture. They are part of that which we call "the nature of things."

1. That irregular succession of ups and downs of the price level, sometimes carelessly referred to as the "business cycle," has especially affected agriculture. In the nature of things, the farmer can contract his business very little when the depression comes. Deflation generally bears harder on the farmer than on the business man.

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2. Readjustments between city and country probably take place slowly, even in highly disturbed periods like the last 10 years. If there were no lag in these readjustments, rewards in city and country would always be equal. Enough people would at once move in either direction to equalize rewards exactly. Since the changes required have nearly all been in the direction of requiring more people to live in the city, the lag in readjustments has constantly favored the city and, hence, city rewards have constantly been higher. Added to this is the effect of the rapid increase of the rural population, making necessary an annual movement to the city of several hundred thousand. A vast amount of human inertia in the aggregate must be overcome to get this many people to leave home and go to the city.

3. In the nature of things, the small, isolated farm unit is not in a position to realize most of the opportunities of large-scale production, such as large-volume buying and selling, scientific analysis of tasks, experimentation to improve methods, and differentiation of tasks which provides degrees in jobs all the way from roustabout to general manager.

4. For similar reasons, farmers as independent-acting units are weak in bargaining power when it comes to buying and selling. They generally use poor judgment also in choosing when to sell. They have not had in the past and do not have yet, except in a few isolated instances, the organization necessary to put them on a basis of equality with the city in this respect.

We must all admit that the nation has done many things for its agriculture. *But the point is that it has done much more for the city, and farming is of such a nature that it needs to have vastly more done for it than the city if it is to maintain equality with the city.* The saying that there is no greater inequality than the equal treatment of unequals is all to the point here; and yet we have not even treated agriculture as well as we have the city.

The conclusion, therefore, is that our national policies have favored the city more than the country. The result has been, first, to give us a larger percentage of our population living in the city; and second, better incomes in the city than in the country. If the farm people moved to the cities the moment that city incomes were a trifle higher, their incomes would always be the same in the two places. But they do not, and the result is lower incomes in the country. It may also have given us in some sections an adverse selection of people for farm work and country life. If so, this, in turn, has lowered the earning power of the farm population.

Differences in incomes between city and country not only determine the amount of money which families can spend on their living, but also the amount of taxes that can be raised for education, roads and other local improvements.

And differences in incomes by no means tell the whole story. A considerable part of the quality of living has to do with such things as nearness to good schools and churches, libraries, doctors, social clubs, and, most important of all, good stores; also, with opportunities for recreation, sociability, and inspiration and leadership; and the satisfaction that one gets from one's lifework. Quality of living is in large part based upon the use made of time and energy outside of the regular work. This is especially true for the women and children of the family. In the nature of things again, some of these things are more difficult to provide in the country than in the city. Distance is such an important factor in the country. Country people really need good roads far more than city people need good streets—that is, if they are really to live—because they dwell so much farther apart, and so much farther from schools, doctors, and stores. It is in the matter of education that our neglect of the country has been most real. We need only to compare our rural education system with that of Denmark to see how we have failed in our duty.

Is it time for the nation to change its policy with respect to its agriculture? The question as to whether the nation is better off with more of its people living on farms is not without its pros and cons. It is a question which has been argued as far back as literature reaches. In the period from 1600 to 1750 in Europe, the prevailing political philosophy, now called "mercantilism," glorified commerce and manufacturing at the expense of agriculture. The rôle of agriculture in the nation as seen in those days was to produce an abundance of cheap food and raw materials for the cities, the raw materials to be made up into manufacture to feed the foreign commerce of the nation. The Mercantilists were followed in France by the Physiocrats, and in England by Adam Smith, both of whom put agriculture at the top as contributing most to the wealth of the nation. The Physiocrats went so far as to say that the farmers were the only real producers, that manufacturing and commerce yielded no ''net product,'' merely transforming the goods produced by agriculture or transferring the title to them. We still have men among us—important figures in public life —who hold ideas not far removed from these simple ideas of the early economists. The sane view, however, is that manufacturing and trade are as essential to human welfare as is agriculture. It is true that a population wholly agricultural could eke out some kind of an existence; but it would be a rather small population, or a miserable existence, and probably both. It takes all the manufacturing and all the commerce that we now have to support our present population with its present high scale of living. At the beginning of the nineteenth century, when Malthus advanced his famous law as to the tendency of the population to multiply faster than the food supply, Europe was looking gloomily forward to an era of population pressure. But in the next hundred years, the population of Europe grew from 180,000,000 to 400,000,000; and the scale of living rose at the same time. The principal factor in the change was the Industrial Revolution, which converted manufacture from a hand to a machine basis, and developed transportation and trade to go with it. A much larger part of our present cost of living is made up of values contributed by manufacturing, trade, and transportation than of values contributed by agriculture. Life would be a poor thing indeed with only that which agriculture contributes to it. It is only a naïve bit of primitive logic that reasons from the fact that we would all starve if we did not have food, to the conclusion that agriculture is the most vital or ''essential'' of all industries.

To be sure, agriculture is a basic industry; basic in the sense that it provides the raw materials of food and clothing manufactures. So are forestry and mining basic industries—they, too, provide the raw materials of manufactures. The term ''basic'' applied to an industry suggests to too many people the idea that it is more essential than others. In modern complex society, almost all industries are essential. Let any one of the major industries of a nation suffer an eclipse and all will be affected. It is not agriculture that is responsible for England's plight today, but manufacturing and mining.

There is, of course, a certain military argument about agriculture and the food supply. A nation whose distribution of national resources is such that, left to themselves, its people will develop a larger manufacturing population than can be fed in wartime, needs to give heed to such a possible emergency and prepare for it. But the United States needs have little fear on such a score. It will always be a food-exporting nation, for the simple reason that it contains within its borders so large a proportion of the best food-producing lands of the earth. If population pressure abroad ever increases the demand for food and raises its price, it will export more food than now. Only a very small increase in price will be needed to induce all the increase in food production that any probable future population of the United States will need.

Then there is the argument that the country is a healthier place than the city in which to live, and that, therefore, we ought to keep as many as possible of our people living there. No doubt the argument is sound—potentially. But until the rural districts are better provided with physicians and dentists and hospitals, and with water and lighting and sanitation, it is doubtful whether the supreme natural advantages of life in the open air and sunlight and free from the noise and dust of the cities are not outweighed.

Then there is the political point of view, which is to the effect that the manufacturing and commercial classes will presently outvote the farmers, and manage affairs to the detriment of the farmers. The first answer is that this is being done right now, but the reason for it is that the farmers are helping them do it. Numbers do not count unless they are mobilized and intelligently led. There never will be a time when the political strength of the nation will be divided clearly into two camps—the farmers against the rest of the nation. The conflict is always between a large number of interests, and, in this conflict, the farmer interest will always be a powerful one if it is organized and knows what it wants and ought to have.

If a second answer is needed to this political supremacy argument, it is that the farmers are going to be in the minority in the country anyway no matter what they do—urbanization cannot possibly be checked enough to save them—and that, therefore, they must learn to operate as a minority group.

We have been told many times that a farming population is necessary to keep our ship of state from grounding upon the rocks of industrial radicalism. Walt Mason once pictured the state of Iowa in a cartoon as an old farm nag plodding steadily up the road and wearing a very large pair of blinders. Recent events would seem to indicate that Iowa farmers are no longer wearing blinders. The time will soon come when our farmers will be as accessible to new ideas as is any group in the nation. That is exactly what rural mail delivery, automobiles, and the radio mean to our country people. The commercialization of agriculture points in the same direction. Nevertheless, ownership of land, like ownership of any other property, does make for stability in a people, and a nation half of farmers is likely to ride on a more even keel than a nation one-fifth of farmers.

There is enough validity to the foregoing arguments to make a nation want to keep itself predominantly rural if it can be accomplished without much sacrifice of the financial well-being of either city people or country people. We can go so far as to say that some measure of pecuniary advantage should be sacrificed in favor of keeping a country rural to a considerable degree. In other words, a nation can afford even to burden the city industries a little and subsidize rural life.

There seems to be a tendency in many people's minds to confuse the quantity of agriculture with its quality. They think that a relatively unimportant agriculture must mean a poor agriculture. England is the best example of this. Just because her agriculture has fallen far behind her industries and commerce in volume, may even have declined absolutely as well as relatively, many people are disposed to assume that her agriculture is poor and her rural folk degenerate. Yet where on the continent of Europe will one find a larger proportion of the farmers prosperous and independent than in England in the last 25 years? The time may come in the United States when only one-sixth of our people live in the country. But there is nothing in this fact to indicate that this one-sixth will not be more prosperous and of better quality than our present one-fourth.

This leads to the next question as to whether the rate of migration to the cities may not be too rapid. There is a common belief that the cities are taking the best of our farm people. A broad national point of view on this question is that if their opportunities for useful work are greater in the cities, that is where they should be. The nation cannot afford to have promising young men and women remain on farms for love for agriculture or any other reason, if they can fill a more important need elsewhere. The most recent studies by rural sociologists indicate that those who leave the farms for the city are principally of two types—those who do not get a foothold in the country because too incompetent or lazy or shiftless and unstable; and those of outstanding ability and ambition who see a better future in the professions or business. There apparently is also a group at the bottom too poor or too weak or too old to get out of the country. This leaves for the country for the most part a middle-class group, comparable to the middle class in the cities. No doubt farming on a modern family farm is a middle-class occupation. It is entirely possible, however, for migration out of a district to be so rapid that it takes many of middle-class ability as well as those of superior ability, and leaves behind a rural population largely of old people and those too poor or too shiftless to migrate. This certainly has happened in some sections, and may well happen to a degree whenever and wherever migration is notably hastened as at present. This, therefore, may be a valid argument in favor of checking the present rate of migration to cities.

The strongest case in favor of raising the incomes and scale of living of farm people is the simple and obvious one that if the objective of national policy is to improve human welfare, then it ought to begin with those groups of the population whose welfare is distinctly below the general level, which surely would include much of agriculture at present. The mere numbers in the agricultural groups make it highly important that their welfare be promoted. The farm population of the United States is at present suffering from important deficiencies in the matter of health, housing, and education that the nation cannot afford to tolerate. The foregoing statement is made in full consciousness of the fact that the farm population of many areas is living on a distinctly higher plane than are the inhabitants of many quarters of our large cities. But there are slums in the country too. Obviously, it is important that the poorest sections both in the city and the country be helped most.

An important aspect of the foregoing is that the farms are now rearing a large proportion of the future populations of our cities. Raising of the migration barriers has made this more true now than formerly. It is doubtful if from now on the cities of the United States would keep up their numbers if they had to depend on their own stock.

OBJECTIVES

The choice which the nation needs to make with respect to its agriculture, therefore, does not lie, except in the very short run, between a low level of income for its farm people and a high level. Migration to the city will presently see to it that the two levels are brought rather closely together, except in the overpopulated submarginal isolated areas, which will continue to be country slums for a generation or two unless vigorous efforts are made to open them up to the world. The choice, instead, is between having a relatively small proportion of the population living on farms, and having a somewhat larger proportion living there; and accompanying this, between having a rapid and having a moderate migration from farm to city in the next 10 to 25 years; and between having a somewhat slowly rising scale of living on our farms in this same period, and having one which overtakes the scale of living in the cities considerably more quickly.

The foregoing analysis had made it clear that the choice lies with the second of these alternatives in every case—very strongly with some of them—especially the last one. The objectives of national agricultural policy should, therefore, be: first, to hasten the improvement in the rural scale of living; second, to check the present rapid rate of migration to cities; and third, to maintain a somewhat larger proportion of our population on the land than otherwise would be the case. The approach to this problem is to raise incomes and scale of living. No effort to check migration to the cities until incomes and living are improved can hope to succeed; or should succeed. The scale of living can be improved temporarily without increasing incomes;

but it will have to come out of capital—as it has been doing since 1921. At present, therefore, incomes must receive attention first. There have been times in the past when the scale of living needed attention most—but not just now.

CHAPTER III

RELIEF PROGRAMS[1]

We shall talk more intelligently about possible programs of farm relief if we first obtain a clear understanding of the different forms which economic activity and control of it take in modern society. The charge of bureaucracy has been leveled at much of what has recently been proposed as aid to agriculture. Cooperative and individual action have in turn been exalted by the various interests opposed to "bureaucratic" methods. Let us step back from the world of affairs for a moment and look at it objectively and from a distance, as one might look down upon a busy ant-hill, and see if we can define and classify the various forms of economic functioning.

MODES OF ECONOMIC FUNCTIONING

The first impression we get is that human activity is largely individual; that, in general, men are trying to do things for themselves and by themselves. If we watch closely, we shall discover that they very much like to do things that way, and that they resent it when they are interfered with in so doing.

Second, we shall quickly discern that although individual action seems to predominate, there is a large amount of associated effort; that men are also organized into various sorts of informal or formal groups of individuals, all having a certain common end or ends, and that in seeking these ends, they organize the work to be done, assign different tasks to different members, and subordinate narrow, selfish preferences for the benefit of all. These groups or associations also seem to object when their freedom of action is circumvented.

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[1] Acknowledgment is hereby made to the *American Economic Review* and the *Cooperative Marketing Journal* for permission to republish some parts of this chapter.

Third, we shall observe a considerable volume of activity which is carried on by governments—protection of life and property, public sanitation, education, roads, mails, public utilities often.

Fourth, we shall find that governments are attempting to curb and control and otherwise modify the activities of both individuals and groups in spite of whatever objections they may have to it. They make people send their children to school, and they prescribe definite grades. They make it advantageous for producers to have their produce inspected at the shipping point; they try to get farmers to adjust their production to market conditions.

It will simplify our further discussion if we can give to each of these four ways of doing things, these ''four modes of economic functioning,'' an appropriate name. The first one discussed is the *individualistic*—in its extreme form, *anarchistic*. The second is *associationistic*—in Europe, called *syndicalistic*. The third is *socialistic*, and the fourth has been known for several centuries as *mercantilistic*. In its milder forms, it is better called *paternalistic*.

At the bottom of each of these modes of functioning there is a philosophy, that is, a set of ideas about it and its place in society. The essence of the individualistic philosophy is: let the individual do it; of the associationistic philosophy, let the association do it. The association may be a cooperative, an ordinary corporation, a labor union. The essence of the socialistic philosophy is: let the state do it, and of the mercantilistic philosophy, let the individual or the association do it, but have the state control them. There have been schools of thinkers in their time who have glorified each of these four philosophies, who would have society operate almost wholly according to some one of them. The individualistic philosophy, in recent history, had its widest acceptance in the latter part of the eighteenth and nineteenth centuries. The great economist, Adam Smith, whose ''Wealth of Nations'' was published in 1776, was a great expositor of the advantages of such a society. He believed that people as a whole prospered most when each individual is allowed to pursue his own selfish ends.

But Adam Smith's individualism soon broke down in England. Factory acts curbing the power of employers of labor began to be passed before 1850. And one of England's great modern economists, John Maynard Keynes, recently published a book called ''The End of the Laissez-faire'' (*laissez-faire* being the French term meaning individualism). Theodore Roosevelt's ''Bull Moose'' platform in 1912 probably represented the farthest retreat from individualism thus far seen in the country. Our present Republican party is avowedly individualistic in its philosophy, but it nevertheless has supported some rather strenuous control measures—the Grain Futures Act, the Packer and Stockyards Act, the Capper-Haugen cooperative marketing bill, the Jardine farm-relief bill. Modern economic society brings many people closely together so that they can do each other much good or much harm. Hence even the most old fashioned are willing to accept a large measure of public control as necessary. You will remember, however, that the Child Labor Amendment was defeated by an appeal to individualism.

Associationistic philosophy has been carried by some thinkers to the point of advocating a society made up solely of organized groups, each working for its own ends—like Adam Smith's notion except applied to groups rather than to individuals. With most exponents, this philosophy takes the milder form of urging a large measure of group action and opposing public control which interferes with this. Thus, the labor unions oppose compulsory arbitration; the cooperatives in the United States opposed the Capper-Haugen cooperative marketing bill, and most of them at the start opposed the McNary-Haugen bills. It is clear that groups may easily carry selfish interests to the point of defeat of the public weal; labor unions by restricting output; producers' associations by control of the output or price. Also different groups may come into conflict with each other just as do the individuals.

The advantages and disadvantages of public operation are too commonly recognized to require discussion here. The sphere of government operation is slowly being enlarged as governmental efficiency is increased.

The mercantilism of the present day is seldom as extreme as in the times of Queen Elizabeth, and Colbert in France. It is more properly called ''paternalism.'' It takes the form of *assisting* individuals and groups rather than dictating to them.

The inspection, grading, and market-news services of the Department of Agriculture are good examples of it. Sometimes it goes so far as to inspect and license, as the Capper-Haugen bill proposed for the cooperatives. The outstanding example of mercantilism in the United States is its protective tariff system, which attempts to direct production into certain lines by subsidizing the producers in them with higher prices.

It should be clear by this time that economic society will always present a mixture of these four modes of functioning. Progress in modern society must include an increasing amount of modification or curbing of individual action. But such modification is useful only when along the right lines and effectively carried out. This means that better machinery is needed for controlling and guiding and influencing it. Progress in modifying individual action for the common good therefore depends upon progress in improving the machinery for it. The machinery is of two sorts—governments, either to operate or to control and guide, and associations, with somewhat different ends and different methods. It is equally clear that governmental efficiency is increasing altogether too slowly to meet the needs of the situation. Moreover, it is unfitted to cope with many of them. Hence, any progress along the lines of associated effort is greatly to be welcomed as a supplement to governmental progress. The two working together can gradually build us a social organism in which man shall fulfill his glorious destiny.

Associated effort takes many forms ranging all the way from the informal working together of a few persons to our large corporations and combinations. The objective may be anything from raising a barn or selling cotton to profitable investment of funds or large profits in a corporation. There may be no formal organization whatever—merely the unconscious acceptance of somebody's leadership, as when a group assembles for emergency action. Or at the other extreme, the modern corporation, in which the individual members virtually may have yielded control to the officers of a highly formal, highly legalized organization. Certain of these forms of associated effort we have come to call "cooperative." In general, we do not call cooperative those organizations in which a high order of control is vested in the governing body. We have set up a considerable measure of democratic control as essential to cooperation. The pressure from the operating group in a cooperative is to give more authority to the central board, to give it power to enforce grade specifications, to force delivery when it is wanted, to buy and sell entirely at its own discretion, etc. This centralized control is the essence of the type of cooperatives that Mr. Aaron Sapiro has always labored to establish. The membership is inclined, however, to insist upon retaining a considerable measure of control. Somewhere between the two extremes of strong central control and strong membership control lies a degree of democratic control beyond which cooperation, as we understand it, ceases to exist. It is entirely possible for the centralization of power to be pushed to the point where little cooperation is left. Where this point is, no two would agree.

The other differentiating principle which has been set up relates to the objective. It is usually stated that a farmer's selling organization must have one objective—to sell its product. Improving the quality of the product is interpreted as an important incident to the good price. If the primary objective were instead to obtain a good dividend on capital stock, it would no longer be a cooperative. Even if this were only a secondary objective, as it is in many farmer's elevators in the Middle West, we would say that the cooperative principle was badly twisted. Similarly, a buying cooperative has buying good merchandise at a low price for its objective; an insurance cooperative, the providing of sound insurance at a low cost. It is conceivable that securing a good return on surplus funds by investing them safely and wisely, as this is supposedly done by the modern investment trust, might become a cooperative objective. In this case, low rates to the users of these funds would be a conflicting objective. In general, there cannot be two conflicting objectives; and yet the credit associations of Europe, and proposed cooperative banks in the United States, attempt to reconcile reasonable rates to böth lenders and borrowers of funds. No one would say that such an arrangement could not be truly cooperative. And reasoning along similar lines, farmers in grain territory might agree that reasonable rates of return on surplus capital and reasonable prices for grain might both be the cooperative objectives of one organization. Hence, differentiation in terms of objective alone will not suffice.

In fact, it takes a combination of the two above differentiating principles to define what we have come to understand as cooperation in agriculture. There must be a reasonable measure of democratic control by and in the interest of those who furnish the business of the association. The latter phrase is only another way of referring to the fact of the objectives. The business of the association may involve more than one objective, although ordinarily not in any important sense. Even the foregoing statement does not provide any clear-cut distinction between cooperation and the other forms of associated effort. Cooperation is a matter of degree. The cooperative element in an enterprise weakens, first, as democratic control gives place to centralized control, and secondly, as conflicting interests enter and objectives become confused.

In the matter of centralized control, particular attention must be given to the way in which authority is delegated to the central board. Every working organization must have a central authority with power to act. On paper, at least, it derives that power by vote from the membership. The essence of democratic control lies in constant reference of important matters to the membership and direct responsibility to it. Large freedom of action by the governing board is contrary to democratic control, even though it is voted by the membership, and especially if it is provided for in by-laws or membership contracts.

If space permitted, the writer would find it interesting to consider next in detail the special conditions of agriculture in the United States as they relate to the different modes of economic functioning. Instead, he will have to be content with pointing out a number of special limitations growing out of, among other things, the size of the operating unit, which make it highly needful that some form of governmental or associated effort be called in to supplement individual effort. It is not necessary to take time to discuss these. Most of them are familiar friends:

1. Too small a volume of product per farm—

a. For economical physical handling.

b. For advantageous sales contracts.

c. For securing monopoly advantages of special quality through branding and advertising. In the manufacturing world, each producer's major effort is to turn out a product different from everybody else's, if not better, and to convince the public that it is better. To the extent that he succeeds, he enjoys monopoly advantages from it. This is possible only to a very limited extent with individual farms.

d. For securing skilled salesmanship, adequate market information, understanding of market forces and prices. The individual farmer cannot himself be expected to qualify in this respect, nor can he individually hire one who does.

e. For effective standardization of the product.

2. Only in occasional instances do farmers enjoy the monopoly advantages of location, that, for example, merchants on good corners enjoy. An exception in these modern times is the farmer who has a good location for a roadside stand. Milk producers near to large cities may even be at a disadvantage due to location because they are likely to have no other sales outlet.

3. Farmers do not have the advantages of patent protection on their products.

4. They cannot make exclusive sales contracts and control the price of their products clear through to the consumer.

5. They are not able to protect the quality of their products clear through to the consumer.

6. The flow of farm products to market is erratic because—

a. Of a large number of units acting more or less alone;

b. Of uneven production due to weather, pests and diseases;

c. Of uneven production due to shifts in production.

7. Production does not adjust itself easily to changing economic conditions as in manufacturing.

8. Small volume of production makes it difficult for individual farmers to employ power and large-scale equipment economically in production, to use high-quality sires, to introduce improved methods, to carry on investigations looking to improved methods, and otherwise to realize the advantages of large-scale production.

9. Individual farmers are similarly handicapped in their buying, in securing credit and insurance, and in other similar services.

10. Roads, schools, protection of health, police and fire protection are more expensive to maintain—so expensive in relation to available resources that they are not adequately provided in most areas.

Without argument, we will agree that government operation is likely to succeed best with some of these lines of activity, notably schools, health, and fire and police protection—even though it may provide for them inadequately. Governmental control or aid is necessary in the matter of grading, inspection, and market-news service, and many other lines. It may be especially needed at this time in order to raise the level of farm incomes as quickly as national welfare dictates. But many of the limitations of agriculture will best be overcome by some form of associated effort. Looking at it as a matter of a couple of hundred years, agriculture is surely working toward forms of associated effort which will overcome, in large part, if not wholly, all the foregoing limitations—which will put it upon a plane of equality with urban society in nearly all of the above respects.

RELIEF ACTIVITY

With this as a foundation, let us pass in review the efforts to improve the condition of agriculture that have accompanied the recent agricultural depression. Following is a chronology of the more significant events. The numbers of bills are given for convenient reference in the Congressional Record.

This list does not include the activities of the established agencies, such as the United States Department of Agriculture, the state departments of agriculture and marketing, and the land-grant agricultural colleges and experiment stations, all of which are highly significant in the aggregate. All of these have turned their energies more than commonly to immediate problems, recognizing the urgency of the situation. Some of the activities of these agencies, such as the issuance of the *Outlook Reports* of the Department of Agriculture, deserve a place as special events in the following outline:

1920

December—Fordney emergency tariff bill (H. R. 15275), increasing duties on farm products, introduced Dec. 20.

1921

January—War Finance Corporation revived for purpose of "assisting in the financing of the exportation of agricultural and other products'' (S. J. Res. 212). Loans to cotton cooperatives mostly beginning in July, 1921.

March—Emergency tariff vetoed by President Wilson, Mar. 3.

April—Capper-Volstead Act (H. R. 2373) authorizing association of agricultural producers introduced Apr. 11.

—— Emergency tariff bill (H. R. 2435) reintroduced Apr. 12.

May—''Agricultural bloc'' in Senate organized May 9.

June—Emergency tariff act signed by President Harding, June 27.

—— Fordney-McCumber Tariff Act of 1922 (H. R. 7456) introduced June 29.

August—Packer and Stockyards Act (H. R. 6320) passed Aug. 15.

—— Grain Futures Act (H. R. 5676) passed Aug. 24.

—— Agricultural Credits Act (S. 1915) broadening powers of War Finance Corporation to include loans to rehabilitate agriculture, passed Aug. 24. Extended later to end of 1924. Total of $297,000,000 loaned for such purposes.

December—Commission of Agricultural Inquiry reported findings to Congress, Dec. 6.

1922

January—National Agricultural Conference called by President Harding on Jan. 23–27; invitations sent to 300 farmers and farm owners, 75 farm officials, and 64 agricultural business men.

February—Capper-Volstead Cooperative Act signed Feb. 28.

April—Tariff Act reported from Senate committee, Apr. 11.

September—Tariff Act of 1922 passed Sept. 21.

1923

August—Federal Intermediate Credit Act (H. R. 4280) passed Mar. 4.

December—Norbeck-Burtness bill (H. R. 4159) introduced, providing credit to farmers to enable them to diversify. Approved by President Coolidge in address to Northwest Agricultural Conference, February, 1924.

1924

January—First surplus bills introduced on Jan. 16 in Senate by McNary and in House by Haugen (see description in Chap. VIII).

February—President calls Northwest Agricultural Conference in Washington, Feb. 4, out of which grew the Agricultural Credit Company with $10,000,000 of capital stock, which gave aid to banks in the Northwest.

March—Tariff on wheat raised from 30 to 42 cents per bushel on Mar. 7.

April—Capper-Williams bill (H. R. 8679) providing for a cooperative marketing system rather closely tied to the government, administered by a federal board and commodity advisory councils, introduced. Secretary Hoover assisted with framing this bill.

June—McNary-Haugen bill defeated in House June 3 by vote of 223 to 153.

July—''American Council of Agriculture'' organized at St. Paul, July 11–12, with George N. Peek as president.

November—President's Agricultural Conference met Nov. 17–20. Hearings on livestock situation.

1925

January, February—Agricultural Conference held hearings on cooperative marketing and organization of federal government activities for agriculture, Jan. 5–28. Report on livestock situation Jan. 14, recommending more sympathetic administration of the Federal Intermediate Credit Banks, and the granting of these banks power to rediscount loans of federally chartered agricultural credit corporations; also advocating a carefully administered leasing system for the grazing lands in the public domain. On Jan. 28, a further report recommending enactment of a cooperative marketing act of the general nature of the Capper-Williams bill; additional tariffs on farm products; contraction of agriculture to a domestic self-sufficiency basis, ''with only such foreign markets as shall be profitable,'' and more federal aid to state experiment stations. On Feb. 2, a further report calling attention to duplication of effort and friction between federal departments and asking for an agency to coordinate these.

——Capper-Haugen bill introduced (S. 4202) embodying Agricultural Conference's recommendations on cooperative marketing. These recommendations provided for a federal cooperative marketing board outside the Department of Agriculture with the Secretary of Agriculture and the Secretary of Commerce as two of the five members. One of the functions of this board was to be the federal registration of cooperatives found to be sound after examination.

——Purnell Act passed (H. R. 157) appropriating $20,000 a year to each state experiment agricultural station for research particularly in agricultural economics, rural sociology, and home economics, and $10,000 more each year following up to $60,000 in 1930.

——Capper-Haugen bill defeated by substitution of Dickinson bill (H. R. 12348) in the House. The Dickinson bill had been drafted hurriedly by cooperative interests opposed to the Conference plan. It set up a cooperative marketing board in the U. S. Department of Agriculture and omitted the registry plan.

March—Revised McNary-Haugen bill reported out of House Committee, but not voted upon before Sixty-eighth Congress adjourns.

——President Coolidge makes an address before the Annual Convention of the American Farm Bureau Federation in Chicago, in which he condemns the McNary-Haugen plan as price fixing, defends the tariff system as a boon to agriculture, and describes agriculture as nearly back to normal.

1926

January—Sir Josiah Stamp's correspondence with Dawes on the McNary-Haugen plan published. Second printing with additional correspondence in December.

——McKinley-Adkins bill (S. 2289) introduced. This included the export debenture plan of Prof. C. L. Stewart of the University of Illinois.

——Dickinson bill (H. R. 6563) introduced, Jan. 4. This bill was a surplus bill in which the cooperatives were to function principally.

——Conference called on Jan. 28 at Des Moines by Governor Hammill of Iowa, at which eleven states were officially represented, and the Executive Committee of 22 was created with Peek as chairman. This committee has conducted a vigorous campaign ever since.

March—Tariff on butter raised on Mar. 6 from 8 to 12 cents a pound.

——First Conference between McNary-Haugen leaders and southern leaders held at Memphis, Mar. 19 and 20. Following this, President Kilgore of the American Cotton Growers' Exchange joined the group in Washington working for the bill. Plan revised by incorporating the cooperative features of the Dickinson bill. The bill resulting was the McNary-Haugen bill defeated in May.

April—National Industrial Conference Board representing the business interests makes its report on the agricultural situation, urging strongly the need of relief legislation.

——McNary-Haugen bill (H. R. 11603), (Curtis-)Aswell bill (H. R. 11616) and (Fess-)Tincher (H. R. 11606) reported to House Apr. 27.

May—McNary-Haugen bill defeated in House May 21 by vote of 167 to 112. Tincher and Aswell bills both rejected as substitutes for it.

June—Senate on June 24 rejects by vote of 45 to 39 a somewhat amended form of the McNary-Haugen bill with which Dawes' name had become associated in the discussions.

July—Act passed appropriating $225,000 to set up a division of cooperative marketing in the U. S. Department of Agriculture to offer friendly assistance to the cooperatives. The Fess bill (S. 4462) providing for an administrative division of cooperative marketing with power to assist in handling surpluses and appropriating $100,000,000 for this had been defeated June 29, by a vote of 54 to 26. The administration favored this measure.

November—President Coolidge appoints special committee, with Eugene Meyer as chairman, to finance the storage of 4,000,000 bales of cotton; but very little storage was thus financed.

——Joint meeting at St. Louis, November 17, of farm organizations of Midwest and South at which was set up a non-partisan alliance to support the McNary-Haugen bill. Following this, Governor Lowden toured the South.

1927

January—Curtis-Crisp bill (S. 5088) introduced Jan. 6. Provided for a ''federal farm board'' which was to make advances to cooperative associations to enable them to buy and withhold from the market any non-perishable farm product, whenever there was proved to exist a surplus of it ''above world requirements,'' and this surplus threatened to ''depress the price of such commodity below the cost of production with a reasonable profit to the efficient producer thereof,'' a revolving fund of $250,000,000 being provided to carry out these provisions. This bill had administration support.

February—McNary-Haugen bill passes both Houses of Congress and is vetoed on Feb. 25. The vote in the Senate was 51 to 43, and in the House, 214 to 178.

November—Committee of the Association of Land Grant Colleges publishes a report recommending legislation that ''should provide for equalization with reference to such matters as taxation, tariff, and freight rates, and should provide for a sound land policy and further improvement of credit facilities.'' The recommendation on the surplus was some sort of ''unified action.''

——Business Men's Commission, representing the U. S. Chamber of Commerce and the National Industrial Conference Board, publishes report and recommendations for farm relief, including tariff revision downward.

1928

March—McNary bill (S. 3555) reported to Senate March 8. Broadened to include all farm products and all types of surpluses, seasonal and regional and domestic as well as annual and national. Financing by equalization fee to be resorted to only if buying and selling and storage operations failed to accomplish purposes sought by the bill. President given full appointive power. Appropriation, $250,000,000. House Committee voted out similar bill Mar. 26, after holding hearings from Jan. 16 to Feb. 25, in which other proposals were considered, especially the export debenture plan.

April—McNary-Haugen bill, amended to include insurance provision of House bill and providing $400,000,000 in place of $250,000,000, passed Senate by vote of 58 to 23.

May—McNary-Haugen bill passes House May 3 by a vote of 204 to 121. Vetoed by the President. Senate votes 50 to 31 on May 25 to override the President's veto.

The thought that comes to one most forcibly after reviewing these efforts at farm relief is the belatedness of some of them. The Association of Land Grant Colleges should have set a committee at work in 1921 in place of in 1927. The same is true for the United States Chamber of Commerce. The fact is that these people expected agriculture fully to recover in a few years. They did not appreciate the enormity of the catastrophe or the permanence of some of the changes. After prices improved in 1924, they tended to think too much in terms of current operating statements and not enough in terms of balance sheets. It always takes time for busy people to readjust their thinking even after they make up their minds they need to do it. It was not until the farmers developed radical leaders who began to demand extreme measures, that their plight was taken seriously by the general public. The extremists of 1921 and 1922 who talked of barefaced price fixing were largely ignored. Nobody expected their plans to receive much attention. But when the first McNary-Haugen bill came within 40 of half the votes cast in the House in June, 1924, then followed some startled thinking. It took even more than this, however, to swing the Chamber of Commerce and the agricultural college deans into action in 1926 and 1927. They had to be convinced by persistent pressure that the exponents of this new system were in deadly earnest.

It is a fair description of much of the activity since 1924 to say that it has been principally aimed at heading off more radical measures.

The chart and chronology show that there was a pronounced spasm of farm relief activity at the very start. The depression fell with heavy hands upon the closing days of the Wilson administration. In the short final session of the sixty-sixth Congress, two bills were introduced to relieve agriculture, one the Fordney Emergency Tariff Act, vetoed by the President on Mar. 3, and the other reviving the War Finance Corporation and directing it to assist in the financing of the exportation of agricultural products. This latter bill was passed over the President's veto on Jan. 4. In April, the wholesale index for farm products reached 117. The new Congress put the "Commission of Agricultural Inquiry" at work on Apr. 25, passed the Emergency Tariff Act in June, and three more relief acts in August. When these had been passed, as well as the new tariff act in September, 1922, and the new Intermediate Credit Act the following August, Congress had played its full bag of tricks. But the farmers were still unsatisfied. Foreclosures were still on the increase and likewise bank failures. Land prices were sinking fast. Since then, the course of farm relief has been determined largely by the agricultural interests themselves, represented in Congress by a largely non-partisan agricultural bloc.

It was this bloc, already rather closely knit, that attacked and defeated the Capper-Haugen cooperative marketing bill, embodying the Agricultural Conference's ideas on this subject, introduced in February, 1925, on the ground that it took cooperative marketing out of the Department of Agriculture where it belonged and put it where the Department of Commerce could get hold of it, and, in addition, set up rather rigorous governmental machinery for its control. The cooperatives back in 1925 were carrying their syndicalism almost to the point of complete non-intervention. Friendly assistance, such as they were getting from the Department of Agriculture, they welcomed, but not the kind of supervision that certain mercantilistically minded members of the Agricultural Conference deemed highly necessary for them. It is interesting to observe how the syndicalistic philosophy of the cooperatives later gave way before the allurements of McNary-Haugenism.

It will be remembered that the agricultural bloc not only defeated the Capper-Haugen bill in the closing days of the first Coolidge administration, but also the first Mellon tax bill and other administrative measures. It figured conspicuously later in the failure of the Senate to confirm the nomination of Warren to the Cabinet. The fight for the McNary-Haugen bill had already given a new cohesiveness to the agricultural bloc. It is, therefore, not difficult to understand that temperatures were running very high in administrative circles in the winter of 1925.

Let us now consider in more detail the actual measures taken. They are not to be condemned *in toto* merely because they have not been of heroic enough stature to cope with the monsters of these evil days. Of the strictly emergency measures, those relating to credit have been most important. Loans were badly needed in 1921 and 1922, partly to finance growers waiting for a market for their products, and partly to renew a portion of the large volume of maturing obligations. Loans were needed in order to ease off the credit load gradually and prevent a complete and sudden breakdown of the banking system. Even as it was, there was a virtual breakdown in many counties in the Northwest. Condemn them as one can, the state rural credit systems hastily set up were in some states an important help. The War Finance Corporation made loans on agricultural commodities and to banks in agricultural districts amounting to nearly a half billion. The financing of the surplus of the 1926 cotton crop probably helped a little also. As to seed loans, opinion is divided whether their good and bad effects weighed the more heavily.

The report of the Commission of Agricultural Inquiry was timely and aided in an understanding of the situation. Congress instructed the Commission to report on: (1) the condition of agriculture and the causes of the depression, (2) the adequacy of the credit machinery and credit resources, (3) transportation, and (4) marketing. Its recommendations to Congress covered these subjects in detail, and were constructive and sane—perhaps too sane. Improvement in conditions, the report stated, could not ''be brought about by legislative formulas, but must be the result for the most part of the interplay of economic forces.'' Something has been done since along the line of each of the thirteen recommendations. Its three foremost suggestions were legalizing cooperative combination of farmers, intermediate credit banks, and lower freight rates on farm products.

The National Agricultural Conference of the winter of 1922 was called by President Harding at Secretary Wallace's urgent request. His purpose was partly to crystallize a definite program of farm relief, partly to get this large group of 390 important people to thinking along more or less concerted lines, and partly to obtain the weight of their support in pending and prospective legislation. A total of 37 legislative recommendations were made to Congress, 2 to the President, and 3 to the farmers. In the list were surely some of doubtful value, but taken as they stood, they constituted a good working program for agricultural betterment. The most sweeping of them was that ''Congress and the President take steps immediately to reestablish a fair exchange value for all farm products with that of other commodities.'' This statement expressed the judgment and will of the Conference. It was hardly specific enough to suit several advocates of price fixing who were present. The largest immediate value of this conference was the aid it rendered to pending developments, specifically to the Capper-Volstead Act legalizing cooperative combination of farmers and to the Lenroot-Anderson Intermediate Credit Act of 1923, and to the expansion of some of the reporting work of the Department of Agriculture.

The conference called by President Coolidge in the winter of 1924–1925 was apparently his response to a request from farmers' organizations made before Secretary Wallace's death in August, 1924, that he have Secretary Wallace call such a conference. McNary-Haugenism was in the air. Secretary Wallace had been one of the first converts to it. The President did not want any more official endorsements of it. He chose the personnel of his conference and organized it with great care. It performed according to his expectations, but, as already pointed out, to little avail. Its most solid achievement was preparing the way for the passage of the Purnell Act securing additional support to the state experiment stations. Three of its members were agricultural college deans. It was instructed to report on three subjects: (1) the emergency in the cattle industry, (2) the administration of government departments as they touch agriculture, and (3) pending legislation. It despaired of its task before really getting into the third of these subjects. What little it did say strongly suggested the Republican doctrine of protective tariffs for agriculture, self-sufficiency, and reduced exports of farm products.

The rest of the progress of farm relief relates to the McNary-Haugen proposal and the efforts of the second Coolidge administration to stem the tide against it. At the start, the administration clearly had the advantage in the conflict. The overwhelming vote by which the administration was returned to power in 1925, and the heavy preponderance of adminstration support in the House, seemed to many to presage the doom of the McNary-Haugenism for all time. But such has not been the case.

REMEDIES PROPOSED

It is interesting to set over against this schedule of activities, the specific recommendations of the two agencies which have studied the agricultural problem recently, the Business Men's Commission on Agriculture, and the Special Committee of the Association of Land-grant Colleges and Universities. The Business Men's Commission consisted of ten men jointly chosen by the United States Chamber of Commerce and the National Industrial Conference Board. The men chosen were high executives in important manufacturing, financial, and other enterprises. There is nothing to indicate that they were selected because of views favorable to agriculture. For economic advice, they called upon Prof. Frank D. Graham of Princeton, and the economic staff of the National Industrial Conference Board. The Commission purposely avoided employing an agricultural economist, feeling, to use its own language, that all these were already committed to particular theories of farm relief. The Committee of the Land Grant Colleges and Universities consisted of four agricultural college presidents, two deans of agricultural colleges, two directors of agricultural extension, and one head of a department of agricultural economics and farm management, Prof. George F. Warren of Cornell. It was also ably assisted by H. R. Tolley of the Bureau of Agricultural Economics of the U. S. Department of Agriculture.

The recommendations of the two bodies hereafter referred to as the ''Commission'' and the ''Committee'' covered the same identical heads. The best way to present their recommendations for farm relief is to compare them under each of these heads. On the tariff, the Committee is content with the almost futile suggestion that tariff rates on farm producs so far as effective be raised to the same level as those on manufactures. The Commission, on the other hand, proposes, albeit in not too open language, that rates on manufactured products be gradually reduced until a point is reached where industry and agriculture are equally subsidized; following this, that tariffs be removed from both industry and agriculture except on products which the long-run interests of the country require that we should produce enough of to meet domestic needs. The philosophy of the Commission, however, is not that of the free-traders; it is instead that of thoroughgoing mercantilists. It believes that the tariff in its time has done us great good by building up our industries, and now it is time that it be used to lift agriculture out of the mire and check our too-rapid urbanization. This can only be done by lowering the rates on manufactured goods. There is the definite suggestion that our livestock always be protected because it conserves the soil resources.

On the surplus question, the Committee definitely proposes a ''Federal Farm Board'' and a system of quasi-official stabilization corporations, with power eventually to buy farm products at a price announced before the date of planting. The Committee report talks vaguely about "unified action" in handling surpluses.

On agricultural readjustment, the college men make a carefully considered statement as to the advantages and limitations of diversification and specialization, whereas the Commission is somewhat confused, apparently influenced by the popular type of pronouncements on the subject. Both see an agricultural revolution under way. The Commission unequivocally favors larger farms, more extensive methods on the poorer land, and the substitution of power and machinery for labor. Both favor lower costs of production.

On forestry, the Committee urges public buying of land for forestation, and tax revision. The Commission recognizes the necessity of government ownership and operation in the present emergency, but inclines to private forestry as fundamentally the better policy in the long run.

On land utilization, both urge caution against further land reclamation at present. The Commission definitely proposes a "National Agricultural Foundation" outside of the departments of government to direct the job of land classification, land development, and land settlement.

On immigration, the two reports are somewhat confused and inconsistent, but both finally come to the point of favoring the maintaining and even extending of the immigration barriers. The Committee's report states that the farmer's "economic interests are in cheap foreign labor for farming"—and only a few pages before it is talking about overproduction and the failure of the rural population to shift to cities rapidly enough. "Economic" to them apparently means "in the very short run and in the individual case," not at all an unusual understanding of the term.

Both reports strongly emphasize the need for more agricultural research and education, and urge additional appropriations to strengthen the work of public agencies working for agriculture.

The rest of the comparison may be summarized by saying that the Commission stresses much more and very properly the weaknesses of our country banks, and sees much less possible improvement in our marketing system. The gains from cooperation are to them largely at the production end. The Commission can at this point be properly accused of occupational bias. There is evidence of similar bias at a few other points, probably in its failure to see the need for a larger unit than even the state in tax support for roads and rural education; probably in its favoring Mississippi waterway transportation development; possibly in its stress on efficiency in production, some would say without ample provision for keeping output within bounds. But the recommendations are on the whole so free from evidence of such bias, also of evidence of the kind of compromising that is usually characteristic of committee reports (the present Committee's report is no exception) that it is hardly decent to single out a few instances to the contrary.

The thought that comes to one after reading these two reports is the disparity between the space they give to the so-called surplus problem and measures to raise prices of farm products, and the attention these have received in Congress and in public discussion. The Business Men's report devotes 25 out of 273 pages to the subject, the Committee less than 3 out of 40 pages. No doubt the emphasis of the two reports is more nearly the proper emphasis. It is unfortunate for agriculture that during the past 5 years the efforts of those interested have been deadlocked on surplus and price-control measures, while a long line of other important agricultural problems have been standing by waiting for a chance at the gate. But perhaps this has been necessary in order to bring the country into a frame of mind to give proper heed to the needs of agriculture.

This present volume will give more attention to direct price-raising measures than is warranted by their importance—in the hope that clarifying the issues with respect to them will help toward a speedy disposal of them. The next section will be devoted wholly to an analysis of the different types of surpluses. The section following will take up the highly mercantilistic proposals for aiding agriculture by raising prices of farm products, chief of these proposals being revision of the tariff.

PART II

THE SURPLUSES

The particular form in which the surplus question has come before the public has very much confused it. To think clearly on the subject one needs to distinguish between: (1) overproduction surpluses due to overplanting or overbreeding ordinarily for a succession of years; (2) annual weather surpluses, due to favorable weather or other natural conditions in any one year, and sometimes two or three years in succession; (3) season surpluses, due to the seasonal nature of most agricultural production; and (4) exportable surpluses, which are merely amounts in excess of domestic consumption.

The criterion of the existence of surplus in the first or overproduction sense of the word, is a volume of production continuing so large over a period that the producers of it have to sell at prices that will not allow them to operate with their accustomed profits, income, and scale of living. Production of many commodities has a way of overexpanding every once in a while. Recent examples of it are sugar in Cuba, rubber in the East Indies, coffee in Brazil, and sisal in Yucatan. Those which have been especially subject to such surpluses of late in the United States are cotton, corn and hogs, and wheat; also copper and petroleum in the mineral field. Dr. L. C. Gray has recently worked out the surplus periods in tobacco in the colonial period in Virginia. The first came in the years 1630 to 1644; and the second in 1658 to 1667. Another came in 1677 to 1683, and another in 1703 to 1713; then one in 1720 to 1724, and, finally, one in 1761 to 1770. No doubt such periods of depression in the tobacco industry have occurred up to the present day. The lines of production which are worst afflicted in this way are those which depend most on exploiting virgin resources. Perhaps lumbering has suffered most of all industries in the United States in this respect.

Surpluses of this type frequently are international in their scope. Such is the case with wheat and sugar at the present time. Under such circumstances, any country producing the commodity involved is likely to put up a tariff barrier and work out its problem of production control by itself. But this procedure is impossible for those countries which produce the commodity for export—as the United States does for cotton, corn and wheat. Of course, if the production of these could be reduced so that there would be none for export, then the tariff barrier would be effective. Hence, there are those who advocate this as a solution of the problem. And to them the getting rid of the ''exportable surplus'' seems the real problem.

The recent plans presented to Congress for handling overplanting surpluses have been designed to raise the price of the product in the domestic market while still maintaining exports. They have proposed making use of the export surplus as a device for accomplishing such an end. Their authors have not been specifically interested in solving the overproduction surplus problem as such—they have, instead, been interested mainly in raising prices of farm products. It is true that our agriculture taken as a whole is in the midst of a period of overproduction and low prices, and that raising prices will be one sort of a cure for the condition. It will be, however, the sort of a cure that a sleeping potion is for insomnia. The real solution of overproduction surpluses is some means of attaining orderly production.

Two other ideas are also frequently associated with the foregoing combination of overplanting and export surpluses. One is that agriculture, generally and all of the time, is producing in such a volume that its products are selling at prices that have established too low a *standard* of living among farm people; and that prices and incomes must be raised so as to allow a higher standard to become established. The normal procedure for attaining this end would be to shift more people to the cities and curtail production in various ways, and educate farm people to higher standards as incomes rise. The more drastic proposal favored by many is to raise prices artificially, by tariff duties, so far as they are effective in their present form, and by various supplementary devices for making them effective afterwards, raising living standards at the same time. It is hoped that once these new standards are established, farm people will not overplant again and destroy them.[1]

The other idea is that having a surplus for export is unfortunate at this time only (or especially, if self-sufficiency is the ideal) because Europe is less disposed to import its food supply, or trade balances are particularly adverse, as a result of postwar influences; and that, therefore, some way must be found of helping agriculture over to a period when our foreign trade in farm products will be on a more normal basis. Such a condition does exist; but it is not a major factor in the situation. If the war had not come along, we would still have been having recurring overplanting surpluses; and our agriculture, as a whole, would have been meeting stiff competition from abroad. Such competition is normal for the present period in agriculture.

In a similar way, if there is any solution of the annual weather surplus problem, it must be some manner of carrying a large crop through one season and into the next so that it is sold and bought more advantageously than at present by both producers and consumers.

Weather surpluses become confused with the other two types because a favorable year is frequently the reason for a supply for export, and because one cannot always say definitely whether it is abnormal yield or abnormal acreage that is responsible for the large production. Both produce prices unbearably low for the time being for several farm products. If the export part of the crop can be used in some scheme to raise the price of an overproduction surplus, why not to raise the price of a weather surplus? It will be shown later that weather surpluses affect the working and the results of the various plans for price raising by control of the export surplus.

Similarly, it is a large crop in some years that creates the season surplus problem. If all crops were average, marketing facilities would work so smoothly that we would never think that there was a seasonal marketing problem. If there is any solution of the seasonal marketing problem, it is some manner of feeding either a large or a small crop to the market that will result in more advantageous selling and buying by producers and consumers. Season surpluses become confused with export surpluses also, because if the crop is one which is exported, a large harvest requires that more move in the channels of foreign trade some time during the year.

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[1] It should be observed that the author uses the term "scale" or "plane" of living when he means the kind of living that a people *now have,* and "standard of living," when he means the kind of living which *they* think they *ought to have,* because of having become accustomed to it, or from contact with other social groups having it. It is important not to confuse these two meanings.

In the three chapters following, weather, overplanting, and season surpluses will be analyzed as to their extent and nature and effect on prices and incomes, after which the operation of various proposed programs for more advantageous disposal will be examined.

CHAPTER IV

THE EFFECT OF SURPLUSES ON PRICES AND INCOMES[1]

In this chapter, an attempt will be made to show how annual weather surpluses and overplanting and overbreeding surpluses affect prices of farm products and gross and net farm incomes.

WEATHER SURPLUSES

The term "weather surplus" as here used means production above normal not only because strictly climatic factors, such as rainfall, temperature, or growing season have been favorable, but also because related biological factors, such as diseases and pests, have wrought less than their usual damage. The opposing term is a weather deficit. The essential character of weather factors is that they are uncontrollable. To the extent that any of them is controlled, as effects of diseases and pests are in part, it does not by itself cause surpluses or deficits.

The production of livestock and livestock products is affected to a less extent than crops by weather and related uncontrollable factors. Good weather may decrease losses of young pigs at farrowing time or of lambs at lambing time, or increase the gains made by cattle and hogs in the feedlot, but the resulting variations are not large. Of more importance are the indirect effects, such as large crops resulting in heavier feeding or good pastures producing a larger milk flow.

Weather factors also affect acreage to some extent. For example, bad weather in the autumn may occasionally reduce the acreage of winter wheat sown, or in the winter may reduce the acreage harvested; or a late spring may reduce the acreage of corn planted. Such effects will not be separated out in this analysis.

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[1] The first draft of this chapter was prepared by Dr. George M. Peterson and Henry I. Richards.

Yields change over a period because of improvement in varieties and cultural practices and because of the shifting of production to other areas either better or less well adapted to the crop. The trend in yields due to such causes must be eliminated to arrive at the annual variations caused by weather and other uncontrollable factors. In this analysis, trend in yields has been determined simply by fitting a free-hand curve to the yield data for past years.[2]

These trends as well as the annual yields are shown in Charts 7 and 8. The trends are all upward from 1886 to about 1910. The trend of potato yields continues upward to 1927, but those for wheat and corn are about level from 1907 to 1927, that for oats is slightly downward, and that for cotton is sharply downward. The trend of wheat yields per acre planted is slightly downward from 1915 to 1922, but from 1922 to 1927 is level.

Difficult questions of interpretation arise with many of these trends. For example, one might be disposed to say that the curve for wheat ought to dip in 1916 and recover from 1918 on. The low yields from 1916 to 1923 are partly due to unusual drouths and rust damage and partly to westward expansion into drier lands. Since none of these is likely to persist except the latter to a degree, they have been assumed to be temporary weather effects, for the most part. Simple straight lines have been used so far as possible to describe the trends. Obviously, none of the deviations determined in this way is a highly scientific determination; but no such determinations are possible.

The deviations of the average yields from these free-hand trends are shown in Chart 9 for cotton, oats, potatoes and wheat acreage harvested from 1886 to 1928. Yields of cotton appear to fluctuate the least and of potatoes the most. During the 42 years, yields were within 10 per cent of the trend line in 30 years for cotton, 27 for wheat (acres harvested), 26 for corn and oats and 23 for potatoes. Average yields for wheat acreage sown were within 10 per cent of normal in 16 years out of 29. The largest

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[2] Moving averages could not be used because yields do not run in cycles, and no mathematical curves could be logically justified.

Chart 7.—Average Annual Yields and Trends in Same. Wheat and Cotton Harvested, 1886–1927, and Wheat Sown, 1889–1928

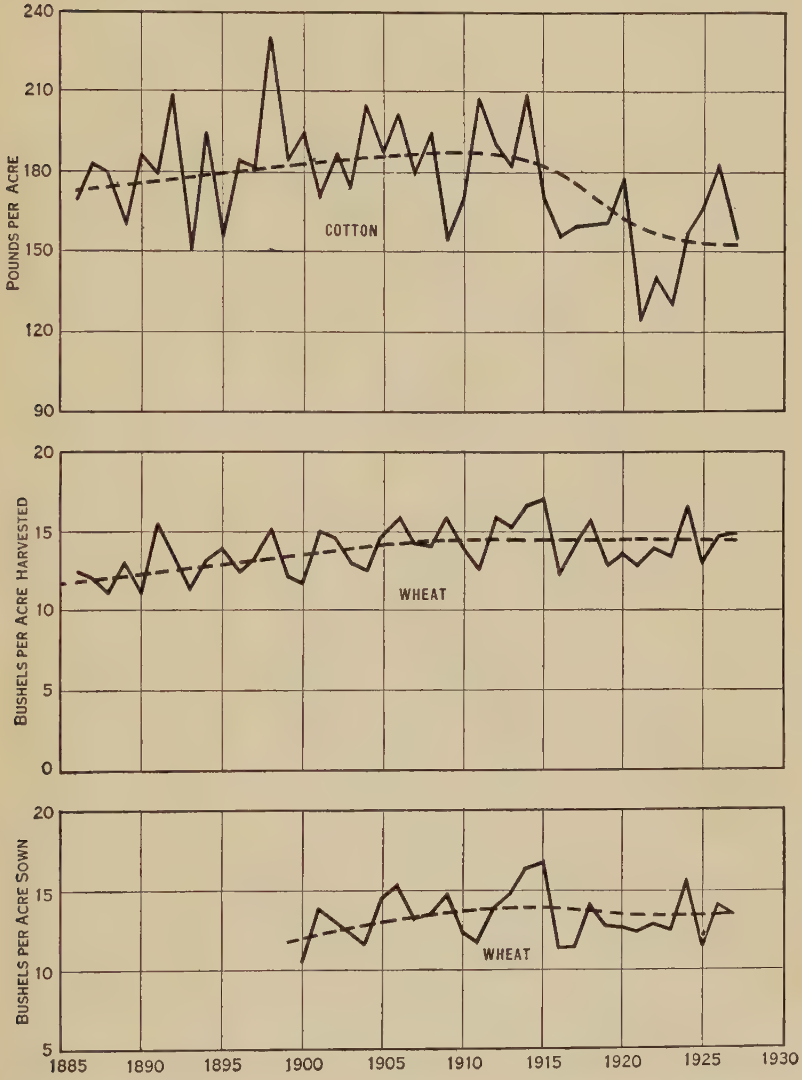
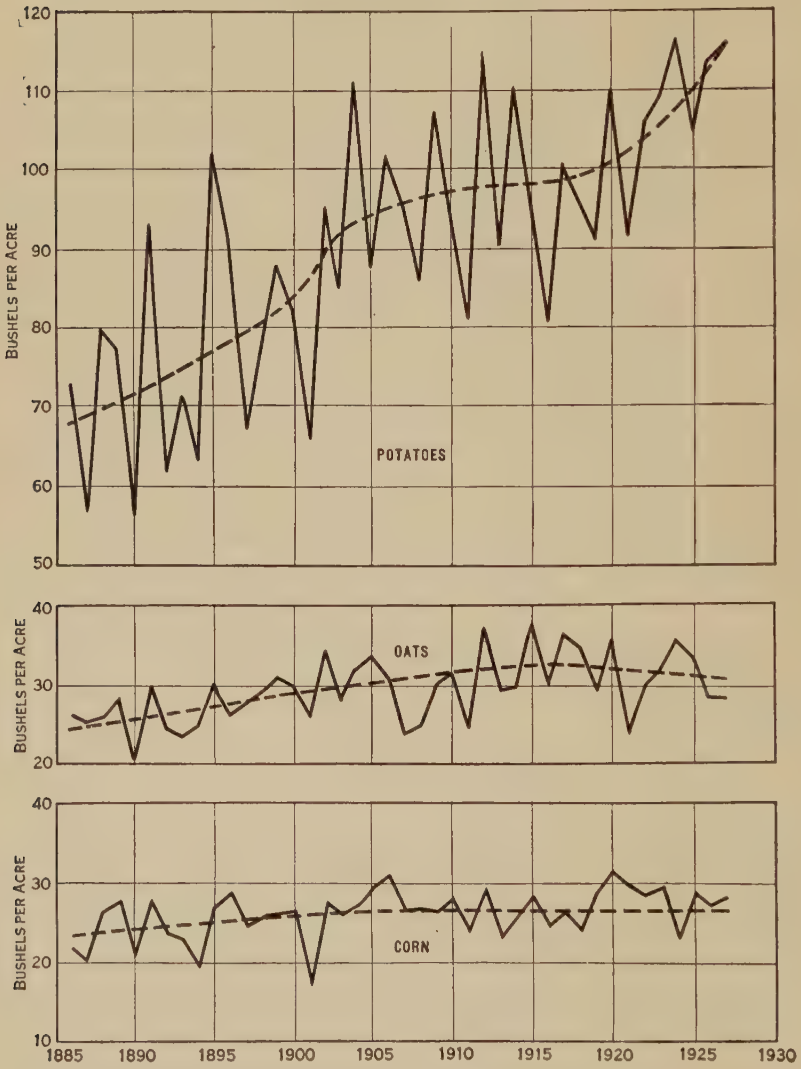


CHART 8.—AVERAGE ANNUAL YIELDS AND TRENDS IN SAME. CORN, OATS, AND POTATOES, 1886–1928



deviations above and below normal for each crop were as follows:

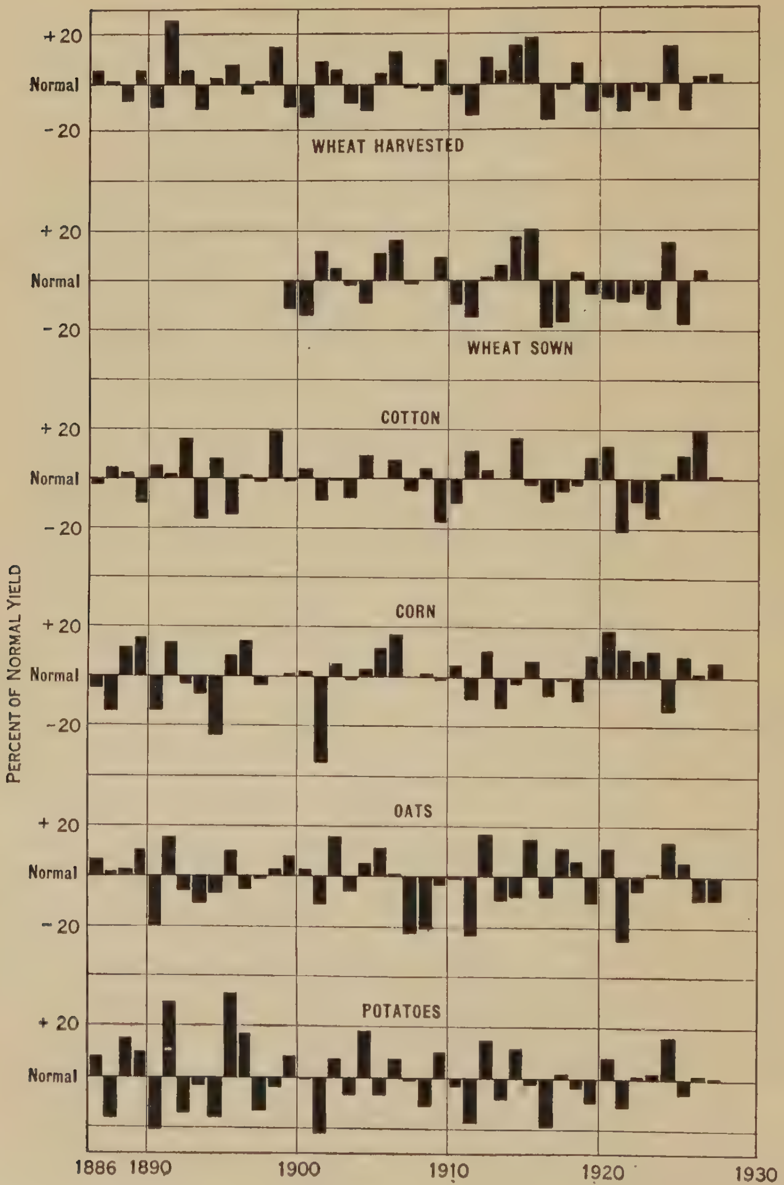
	Crop year	Percentage above trend line	Crop year	Percentage below trend line
Potatoes	1895	32.5	1901	23.3
Wheat (harvested)	1891	25.0	1916	15.3
Cotton	1898	18.7	1921	20.3
Oats	1912	16.9	1921	25.5
Corn	1889	18.9	1901	34.7

The smaller deviations from trend for all crops except cotton in recent years compared with earlier years are probably in part the effect of enlarging the production area and giving good and bad yields a chance to average out.

From the standpoint of annual weather surpluses, the significant fact about these yields is that they are often above or below the trend for two or more years in succession, as shown in Table 7. From 1912 to 1915, wheat yields were consistently above any kind of a trend line that might be drawn, while from 1919 to 1923 they were consistently below any such trend line. Cotton yields show similarly prolonged deviations from trend, especially in recent years, due largely to the boll weevil. Corn yields were consistently above normal by from 7 to 19 per cent between 1919 and 1923, and below normal from 1913 to 1918 in all but the year 1915, when yields were 6 per cent above normal. Oat yields seem to alternate from year to year above and below the trend more regularly than do wheat, cotton or corn; but not as regularly as do potatoes. The striking fact about potato yields is that two poor years in succession have occurred more frequently than two good years. As will be made clearer later, this tendency of yields to be considerably above or below the trend two or more years in succession greatly increases the difficulties of handling weather surpluses. Carrying a part of a large crop over to a second or third year is very costly.

The weather surpluses and deficits could be calculated in the same, or a similar, way for other crops. All crops would be found to have significant surpluses and deficits, some much more

CHART 9.—DEVIATIONS IN YIELDS FROM NORMAL, COTTON, CORN, OATS, POTATOES, WHEAT HARVESTED, UNITED STATES, 1886–1928, AND WHEAT SOWN, 1899–1928



significant ones than these five. One factor determining the extent of deficits and surpluses is the width of the area of production. For a very small area, the yield may range from zero to a bumper crop. Even whole sections may have very large or very small yields. But for areas as large as the United States, usually some sections have favorable seasons while the others are having adverse conditions. For crops that cannot be carried over, but like most fruits and vegetables, must be marketed within a few days or months after harvest, a weather surplus is a more serious matter than for corn or cotton. The problem of

TABLE 7.—YEARS IN SUCCESSION WITH YIELDS ABOVE OR BELOW TREND

Crop	Two years		Three years		Four years		Five years	
	Above	Below	Above	Below	Above	Below	Above	Below
Wheat. .	1886–87 1891–92 1894–95 1897–98 1901–02 1905–06 1926–27	1899–00 1903–04 1907–08 1910–11 1916–17	. . . .	. . . .	1912–15	. . . .	. . . .	1919–23
Cotton. .	1887–88 1911–12 1919–20	1909–10	1890–92	1901–03 1921–23	1924–27	1915–18		
Corn. . . .	1888–89 1895–96 1899–00	1886–87 1913–14	1904–06 1925–27	1892–94 1916–18	. . . .	. . . .	1919–23	
Oats. . . .	1917–18	1896–97 1913–14 1921–22 1926–27	1898–00 1904–06 1923–25	1892–94	1886–89	. . . .	. . . .	1907–11
Potatoes.	1888–89 1895–96 1926–27	1897–98 1900–01 1907–08 1910–11 1915–16 1918–19	1922–24	1892–94				

weather surpluses becomes most acute with a perishable product in a small area supplying a particular market. Thus, the supply of fresh fruit, vegetables, and milk for small local markets fluctuates widely. But large markets draw their supply of some products from small producing areas. Almost the entire United States supply of peaches, strawberries, lettuce, and many other fruits and vegetables at particular seasons of the year is produced in a very small area.

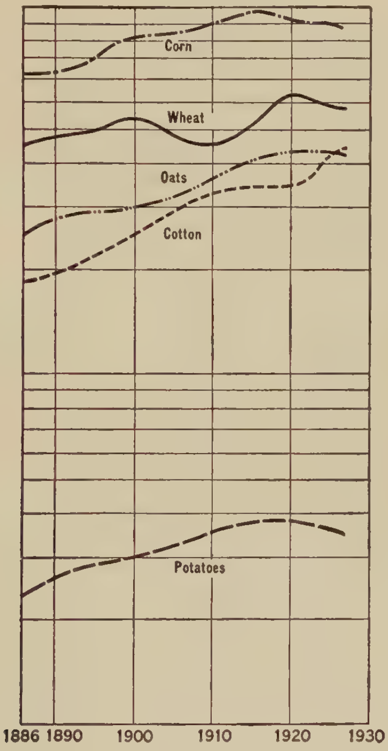
The producing area for the potatoes sold in the large central markets of the United States is much larger than for most fruits and other vegetables, although not as large as for corn, cotton, oats, or wheat. New York, Philadelphia, Boston, Washington, Chicago, and other large cities may receive their supply of potatoes from Maine, Michigan, Minnesota, and other distant states as well as from nearby producing areas. A normal supply on these markets may be the result of a bumper crop in the Great Lakes states and a very poor crop in the Northeastern states. Prices received by producers in any area are thus fairly closely related to the total supply, and areas with large yields sometimes receive a normal or fairly high price, with resulting large incomes per acre, because of low yields in other areas. The areas with low yields may at the same time receive normal or low incomes per acre because of high yields in other areas. Small local potato markets depending normally on locally grown supplies may get out of line very seriously in certain years because no facilities are developed for shipping potatoes in or out.

The supply and price of corn and oats on large central markets in the United States are closely related to the size of the United States' crop. In most years, however, a small quantity of both crops is shipped to foreign markets. When yields and production are unusually large, considerable quantities are exported, especially if crops abroad are poor. On the other hand, when yields and production in the United States are low, import duties and transportation costs tend to prevent importation. Corn and oats growers in the United States thus sell their small crops on markets in other sections drawing their supplies almost entirely from the United States.

Wheat and cotton growers in the United States sell in world markets in competition with supplies from many countries of the world. Prices received by producers of cotton and wheat in the United States are closely related to the total world supply. But, since around 60 per cent of the commercial cotton crop of the world is grown in the United States, and only about 20 per cent of the total world production of wheat, weather surpluses are a more serious problem for cotton growers than for wheat growers.

Chart 10.—Trends in Acreage of Corn, Wheat, Oats, Cotton, and Potatoes, United States, 1886–1928

(Logarithmic scale)



OVERPLANTING SURPLUSES

As already stated, bad weather may cause a slight decrease in the acreage of some crops in some years but, ordinarily, farmers carry out their intentions of increasing or decreasing the acreage of crops in spite of the weather. When the acreage of a crop increases, it is usually because farmers decide that they will add to their net incomes by so doing.

As with yields, changes in the acreage of crops from year to year may be considered as fluctuations about a trend. Chart 10 shows such trend lines fitted by free-hand methods to the acreages of wheat, corn, oats, cotton, and potatoes. The scale used in making this chart is logarithmic, which has the effect of comparing percentages instead of absolute changes. In absolute numbers, the corn acreage increased from 75,694,000 to 100,761,000 between 1886 and 1928; the potato acreage, from 2,287,000 to 3,825,000 acres. The percentage increase was 33 for corn, and 67 for potatoes. It is the latter that are compared on the chart.

As was the case with yields, this method of separating trends from deviations from trends leaves a great deal to the judgment. If the trend line for any one of these crops had been drawn differently, the deviations would have been different. Taken together, the trends and the deviations from them make a complete statement of the changes in acreage, and locate the overplanting surpluses; but they do not indicate with scientific accuracy whether any given overplanting surplus represents a trend in acreage of that crop, or simply a deviation from such a trend. It should be stated at this point that the errors in judgment made at this point do not affect the validity of any of the later analysis of the data.

The general trend of acreage in corn, oats, and potatoes is consistently upward from 1886 to the entrance of the United States in the World War. The trend of cotton acreage is very similar up to 1911, but from then until 1921 it was level, even though yields fell off badly after 1914, due largely to the ravages of the boll weevil. The acreage of wheat increased rapidly from 1886 to 1899, due largely to the opening of new areas in Kansas, Nebraska, and North and South Dakota adapted primarily to the production of wheat. During the following 10 years, other crops were substituted for wheat on many farms in the older farming regions. The development of new hard winter wheat varieties started a new trend upward presently, which later was merged with the war influences.

All of these trends except that of wheat are very similar to that of the population and indicate an increasing demand for these products as well as the expansion of agriculture in the United States. But following the World War, the trend lines flatten out. Declining demand, new foreign competition, and larger yields explain this. Substitution of tractors for horses has saved acreage of feed crops. Use of more fruits and winter vegetables has been another factor. The trend of cotton acreage since 1921 has been sharply upward, due somewhat to improved methods of controlling the boll weevil, but more to the expansion of cotton production in Oklahoma and Texas where the danger of boll weevil is less and where cotton picking and cultivating machinery can be used to advantage.

The deviations of average annual acreages from their trends, as shown in Chart 11, are much smaller than the deviations in yield from their trends. During the 31 years from 1886 to 1916, they were less than 15 per cent in 29 years for corn, in 30 years for oats, in 21 years for cotton, in 26 years for wheat, and in 29 years for potatoes. Since 1916, the deviations from trend have been much larger, due primarily to changes in demand growing out of the war and the subsequent readjustments to postwar conditions. In the 11 years from 1917 to 1927, inclusive, the deviations from trend have been less than 5 per cent in only 4 years for potatoes, 7 years for wheat and oats, 9 years for corn, and 6 years for cotton.

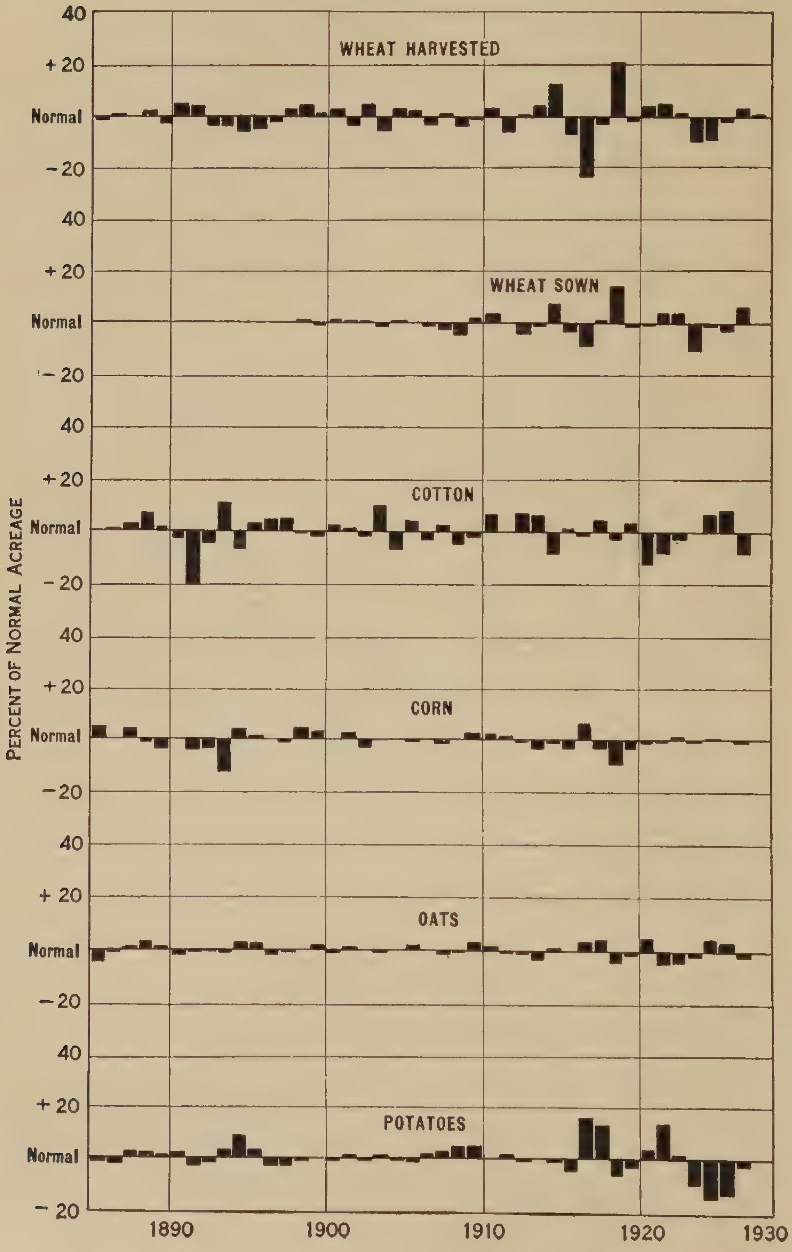
While the deviations of acreages from trend have been less than the deviations of yields from trend, they have in general continued a little longer before reversing themselves. In the 42 years, wheat acreages have crossed the trend line 21 times as compared with 22 times for wheat yields. Comparable figures for corn are 17 and 21; for oats, 18 and 21; for cotton, 25 and 25; and for potatoes, 16 and 28. These differences are significant in programs for control of carryover.

RELATION OF SUPPLIES TO PRICES

The effect of weather surpluses in which we are primarily interested is the effect on prices. The rate at which the size of crop affects prices depends upon the supplies and prices of substitute products, and the ease with which substitutions are made. Feed crops, such as corn and oats, are readily interchangeable with each other or with other feeds in many areas

CHART 11.—DEVIATIONS OF ACREAGES OF WHEAT, COTTON, CORN, OATS AND POTATOES FROM THEIR TRENDS. UNITED STATES, 1886–1927

(Trends are given in Chart 10)



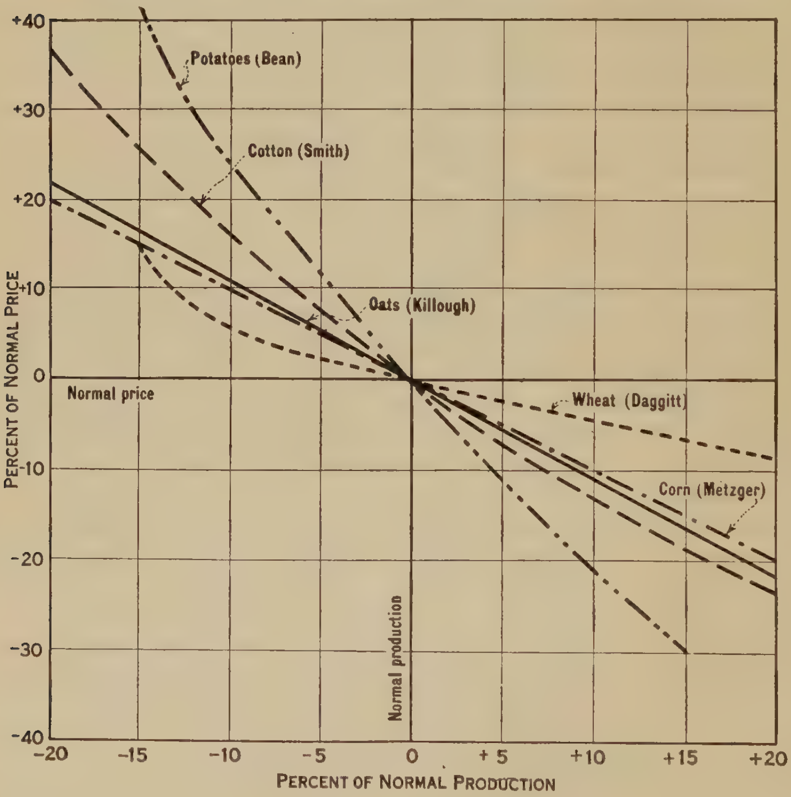
and for certain purposes. Prices of the crops therefore tend to move up and down in the market together. Whenever yields and production of all feed crops are large, more of all is fed to livestock, and the production of livestock and livestock products is increased. Substitution is not so easy with such mostly human foods as wheat and potatoes. Consumers want about the same quantity of them each year, regardless of whether yields are high or low. They are willing to pay high prices in order to obtain their usual quantity, and will not buy much more than usual when prices are low. Large crops consequently sell for very low prices and small crops for very high prices. In 1925, when the potato crop was very small, prices in Boston rose to a peak of $5.79 per 100 pounds in April compared with 99 cents per 100 pounds the preceding April. The 1922 and 1924 prices were so low that many potato crops were not harvested. The problem of weather surpluses is therefore serious for potato growers. As for wheat, the United States always has a surplus to draw upon. The producing area for the principal foreign markets is so large that fluctuations in supply from year to year are relatively small.

Cotton has to compete with products such as wool, silk and rayon which are far less subject than it to fluctuations in production due to weather and other uncontrollable factors. This has a somewhat steadying influence on prices. Likewise does the large carryover of such products, and the long period that they are in process of manufacture and sale. On the other hand, most of the world's cotton is produced in the United States, and cotton makes the clothing of the masses. In the aggregate, therefore, its price fluctuates rather widely with supply.

Prosperity and hard times have some effect on the supply-price relationship. Large crops of winter fruits and vegetables may sell for higher prices when wages are high than when they are low. Potato prices probably reflect similar circumstances. New competing products, such as rayon, or new styles, may change the demand for products from year to year. Such effects, however, are relatively small as compared with those resulting from normal substitutions and trends in the same. The wider the market area, the smaller the changes in the supply-price relationships from year to year.

These characteristics of the supply and demand for corn, wheat, oats, cotton, and potatoes are reflected in the curves of supply-price relationships presented in Chart 12. These curves summarize the relationships that have existed during varying periods in the past for which data are available. These same relationships can be expected to maintain only in a general way in the future; and none of them is a very accurate description of what has happened in the past. Nevertheless, they are the best that can be determined from data now available.[3]

CHART 12.—RELATION OF PERCENTAGE OF NORMAL PRODUCTION TO PERCENTAGE OF NORMAL PRICE, FOR WHEAT, CORN, COTTON, OATS, AND POTATOES; UNITED STATES, VARIOUS PERIODS SINCE 1895 [3]



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[3] The prices used in these studies were as follows:

Cotton: average of December spot prices for Middling Cotton on New Orleans market, 1904 to 1924.

Oats: the high and low prices for No. 2 Oats at Chicago were averaged

The relation shown in the above chart of cotton prices to production of cotton in the United States was worked out by Bradford Smith and published in Department of Agriculture *Technical Bulletin* 50, "Factors Affecting the Price of Cotton." According to this analysis, when production of cotton is 10 per cent below normal, cotton prices are on the average 16 per cent above normal, and when production is 10 per cent above normal, prices on the average drop to 13 per cent below normal. The "normal" crop in these analyses is that indicated by the trend line for the year 1928 in Charts 7 and 8. The "normal" price is the price that this "normal" crop would sell for on the average, with the price level constant, according to the supply-price relationships employed in the analysis.

The supply-price relationship shown for potatoes is for the period from 1921 to 1927 only and, hence, is upon an extremely uncertain foundation. It was worked out by L. H. Bean, of the Department of Agriculture. It is not possible to use a longer period of years because, as Mr. Bean and others have discovered, the relationship has changed greatly since before the World War. A 10 per cent increase in production above normal from 1921 to 1927 was accompanied on the average by a price 21 per cent below normal; whereas during the period from 1906 to 1914, it was accompanied by a price only 9 per cent below normal. A 10 per cent decrease in production, according to the curve for the recent period, is accompanied by an average increase in price above normal of 24 per cent. This change in the

to give monthly prices, and the monthly prices thus obtained were averaged for the crop years July to June from 1895 to 1927, inclusive.

Corn: simple average of the weekly average prices of No. 3 Mixed Corn at Chicago from October to June, inclusive, each year as given in the *Annual Report of the Chicago Board of Trade,* 1892 to 1927.

Wheat: the weighted average prices of No. 1 Northern Spring Wheat at Minneapolis from July to June, 1898 to 1913; the weighted average prices of No. 2 Hard Red Winter Wheat at Kansas City, Missouri, for the same period; and the weighted average prices of No. 2 Soft Red Winter Wheat at St. Louis, Missouri, for the same period, were weighted by the estimated production of spring, hard and soft winter wheat to obtain a composite price. This composite price from 1908 to 1913 maintained a practically constant relation to the average prices received by producers for wheat in the United States as published by the Department of Agriculture.

Potatoes: weighted average farm price, 1921 to 1927.

relation of potato supplies to prices has greatly increased the effect and importance of weather surpluses and deficits. Prices of potatoes change more with supply than do those of cotton.

The supply-price relationships for corn and oats shown in the above chart are very nearly the same. They illustrate very clearly the effect of ease of sustitution on the relation of supply to price. The relationship for oats was worked out by Dr. Hugh B. Killough and published in *Department of Agriculture Bulletin* 1351, ''What Makes the Price of Oats.'' The one for corn is from an unpublished report by Dr. Hutzel Metzger of the Department of Agriculture. The prices of both corn and oats change at about the same rate as supply. When oats production is 10 per cent above normal, oats prices are on the average about 11 per cent below normal.

The relation of wheat prices to production of wheat in the United States is from an unpublished report by E. M. Daggitt, of the American Cotton Grower's Exchange, which he worked out while with the Department of Agriculture. This relationship is very different from that of the other crops. A production 10 per cent above normal depresses prices only 4 per cent below normal. If the rest of the world were also 10 per cent above normal, however, in wheat production, prices would fall much more, perhaps five times as far, or 20 per cent; almost as far as potato prices under similar circumstances. But when production in the United States falls far below normal, as in 1925, the domestic supply becomes short, tariff duties become effective, and prices rise very rapidly.

This last phase of the relationship is of especial significance in considering schemes for raising wheat prices by limiting the supply sold on domestic markets. Apparently, with supplies 10 per cent short, prices of wheat can be increased a great deal by reducing the amount sold on domestic markets very little more. Or, in other words, prices may be increased considerably without causing any marked decrease in consumption.

As stated earlier, no one of these curves can be taken as very accurate and actual experimenting along these lines would reveal how poorly the curves describe the facts.

Central market rather than farm prices were used in each of these analyses because they could be obtained for a longer series of years, and represent more nearly the same quality of product than an average of farm prices. The effect of this on the later analysis will be considered in its place.

The striking feature about the above production-price relationships is that when expressed in terms of percentages of normal they are rather close to straight lines.[4] That for wheat probably would be of this description if world production of wheat and wheat prices on the Liverpool market were taken in place of United States' production and prices. For all the products except wheat, the amount of change in price from normal for any percentage change in supply from normal is nearly the same at all points along the curve. Or, stated in another way, a change in production from normal changes prices from normal about the same whether above or below normal, or close to normal or far from it. A consequence of this is that if the supply is reduced 10 per cent by holding when production is 20 per cent above normal, and this carryover is sold when production is 20 per cent below normal, the total value of the two crops should be the same or nearly the same. These applications of the above supply-price relationships will be considered in more detail in the next chapter.

When the results of an analysis such as the foregoing are reduced to the form of curves, they suggest that the relationships which they express have been determined with a high degree of precision. It should be made very clear that such is not the case. All of the curves have a large element of possible error in them, partly due to inaccuracies in the data, partly to changes in conditions which make old relationships no longer exactly true, and partly to defects in the tools of the analysis.[5]

EFFECT OF SURPLUSES AND DEFICITS ON GROSS VALUES OF CROPS

The gross value of a crop of any size can be estimated from Chart 12 by calculating what percentage it is of a normal crop, reading the corresponding percentage of normal price from the curve for that product, applying this to the price at the farm for a normal crop in Table 8, and then multiplying this price into the volume of the crop. Table 8 presents the data for a normal crop of each of the five products; Table 9 the percentages of normal price for various percentages of such normal crops;

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[4] Earlier analysis of prices of farm products often gave more concave curves than those in Chart 12. Thus the early potato curves were all rather decidedly concave. Apparently, demand has changed in the case of potatoes. A better understanding of the method of fitting curves and lines to data has figured in the change in other cases.

[5] See the discussion of error in these curves in Dr. Mordecai Ezekiel's paper published in the 1929 *Proceedings of the American Statistical Association.*

TABLE 8.—PRODUCTION, PRICE, AND VALUE OF A NORMAL 1928 CROP

Crop	Unit	Estimated normal production for 1928,* millions	Estimated normal price for normal crop in 1923–1927,† cents	Estimated gross farm value of normal crop,‡ millions
Wheat	Bushels	821	117.2	962
Corn	Bushels	2624	82.0	2152
Oats	Bushels	1318	42.0	554
Cotton	Bales	14.2§	16.36‖	1114
Potatoes	Bushels	422	117.0	494

* Read from trends of yields and acreage in earlier charts.

† From the 1927 Yearbook of the Department of Agriculture.

‡ Normal crop multiplied by normal farm price.

§ Average annual production, 1923 to 1927.

‖ Estimated December price of Middling Cotton with normal crop divided by 0.947, the average per cent that prices received by producers were of the New Orleans price from 1909 to 1926.

TABLE 9.—PERCENTAGE OF NORMAL PRICES FOR VARIOUS PERCENTAGES OF A NORMAL CROP OF COTTON, WHEAT, OATS, CORN, AND POTATOES

Percentage of normal crop	Percentages of normal price				
	Cotton	Wheat	Oats	Corn	Potatoes
120	−23.4	−8.8	−21.9	−19.92	−38
115	−18.4	−6.3	−16.2	−14.94	−30
110	−12.9	−4.1	−10.5	− 9.96	−21
105	− 6.8	−2.1	− 5.8	− 4.98	−11
100	0	0	0	0	0
95	+ 7.6	+2.1	+5.7	+ 4.98	+12
90	+16.3	+5.4	+10.5	+ 9.96	+24
85	+26.0	+14.3	+16.2	+14.94	+42
80	+37.2	....	+21.9	+19.92	

and Table 10 the corresponding gross values. It is important to realize that the normal prices in Table 8 are prices at the farm. If they were central market prices, the gross values of crops obtained would be at the central market and not at the farm.[6]

TABLE 10.—GROSS VALUES OF VARIOUS PERCENTAGES OF A NORMAL CROP OF COTTON

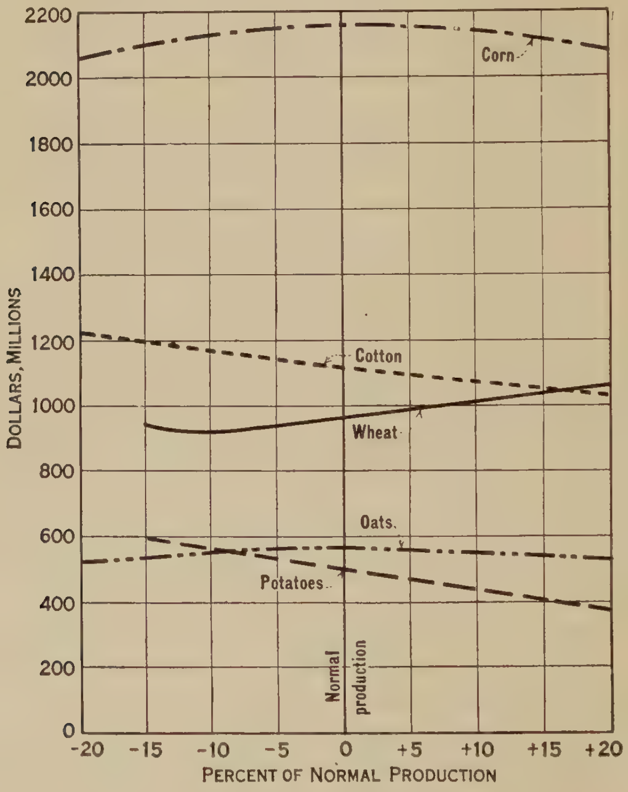
Percentage of normal crop	Total value (millions of dollars)				
	Cotton	Wheat	Oats	Corn	Potatoes
120	1,024	1,053	519	2,069	364
115	1,045	1,036	534	2,104	398
110	1,067	1,015	545	2,130	427
105	1,090	988	548	2,146	461
100	1,114	962	554	2,152	494
95	1,139	933	556	2,146	521
90	1,166	912	550	2,130	551
85	1,193	935	547	2,103	596
80	1,222	....	540	2,063	

---

[6] Except in the case of potatoes, the ratios of United States' farm prices to the central market prices used were about the same with small crops as with large ones, which justifies the use of the foregoing method. Another method might have been to use central-market normals, compute values of the crops in the central market, and then deduct a flat amount per bushel or pound for the margin between farm and central-market prices. Trial demonstrated that the results by the two methods were very nearly the same if average United States' farm prices were used as a basis for estimating farm values of crops; and no other values than these could very well be used. It is true that the farm prices used to give the United States averages represent deficit areas in considerable part. But farmers who have products to sell in these areas receive prices based on deficit conditions, and the average calculation is weighted according to the volume of production, the deficit areas figuring very little in them. Professors Warren and Pearson in their Cornell studies present data showing that when prices in surplus areas are compared with central-market prices, the margins tend to be the same in years of large and of small crops. Thus, Minnesota farm prices for wheat were 25.5 cents under New York City prices in nine small-crop years, and 25.0 cents under in nine large-crop years. Similar comparisons for corn and potatoes gave similar results (*Bull.* 466, ''Interrelationships of Supply and Price''). Such data suggest that the second method described should give the better results. But upon trial with United States' average prices, the differences were only slight.

In Chart 13, the data of Table 10 are presented graphically. The differences between the curves for the five products are very striking. *The wheat curve rises conspicuously with the larger crops; and the potato and cotton curves decline equally conspicuously.* Corn and oats crops not far from normal sell for the most money at the farm. *Crops of cotton and potatoes still smaller than the short crops we now have would sell for still more money.* How much shorter they could be before substitutions would check the rise in price and cause a decline in value cannot be told from available data. But that such a point exists is not to be doubted for a moment. Popular speakers on the

CHART 13.—RELATION OF GROSS VALUES OF CROPS TO SIZES OF CROPS: CORN, COTTON, WHEAT, OATS, POTATOES; UNITED STATES



surplus question have not always appreciated this. *As for wheat, crops larger than the present large crops would sell for still more money.* This would continue until the United States' crop was so large that it overwhelmed the world's markets.

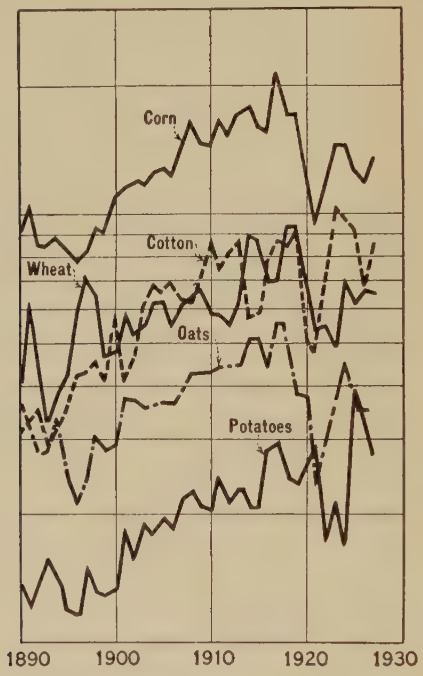
It is necessary again at this point to state that these curves suggest more precision in the results than is justified by the data. There can be little doubt as to general direction of slope of the curves for potatoes, cotton, and wheat, but the slope indicated may be too much or too little. As for the curves for corn and oats, there is a large measure of uncertainty as to where the point of highest total value comes.

It follows from the foregoing that, so far as gross receipts are concerned, *cotton growers and potato growers should be anxious for low yields and bad weather, while wheat growers benefit from good weather and large yields.* A crop of cotton 15 per cent below normal would sell for $169,000,000 more than one 20 per cent above normal. A potato crop 15 per cent below normal would sell for $596,000,000 compared with $364,000,000 for a crop 20 per cent above normal. Corn growers and oats growers should want neither large nor small crops—either is bad. A corn crop 20 per cent below normal would be worth about the same as one 20 per cent above normal, but a normal crop would be worth about $83,000,000 more than either.

It also follows from the foregoing that whereas a wheat crop 20 per cent above normal would be worth about $29,000,000 more than a cotton crop 20 per cent above normal, a cotton crop 15 per cent below normal would be worth around $258,000,000 more than a wheat crop 15 per cent below normal.

Chart 14 shows how the gross values in terms of dollars of a constant value, of the five crops have actually changed from year to year and over the whole period since 1890. The changes indicated are in terms of percentages of the values of the preceding year, as in Chart 10, so as to bring the five crops to a comparable basis. The gross values of the wheat, cotton, and potato crops fluctuated most from year to year. The farm value of the potato crop in 1925 at Dec. 1 farm prices (not adjusted for price level) was $604,000,000 as compared with $263,000,000 for the 1924 crop. The cotton crop in 1926 at actual Dec. 1 farm prices was valued at $983,000,000 as compared with $1,464,000,000 for the preceding crop. Although the gross value of wheat crops does not change so violently from year to year, the 1924 crop was worth $387,000,000 more than the 1923 crop at actual Dec. 1 farm prices.

CHART 14.—GROSS VALUE OF CROPS OF CORN, WHEAT, COTTON, OATS, AND POTATOES IN TERMS OF 1913 DOLLARS, 1890–1928 *



* Data for this chart Appendix Table *D*.

EFFECT OF SURPLUSES ON THE NET VALUE OF CROPS

Producers are more interested in the net value than in the gross value of their crops. Large crops ordinarily involve larger total expenses of production than do small crops, although lower expenses per bushel or pound. So far as differences in yields due to weather are concerned, marketing expenses increase with yields, while expenses for seed, fertilizer, labor for planting and care of crop, rent of land and depreciation remain practically constant.

The rate at which harvesting and marketing costs vary with yields is different for different crops. This is made clear by considering the different expenses for the different types of crops. The labor used per bushel for harvesting and marketing a large crop is usually somewhat less than for a small one. More labor is used in picking an acre of cotton yielding 200 pounds than one yielding 100 pounds, but not twice as much. The same is true of husking corn or harvesting potatoes. For wheat and oats, large yields use very little more harvest labor than do small yields. Even though more hours of labor may be needed, the actual expenses may not be increased at all. Many farmers do not hire labor. If the yield of a crop is large, they simply work longer hours. In 1924, only 28 per cent of the farmers in the South Atlantic and South Central states reported any labor hired. In the Wheat Belt states, Kansas, Nebraska, Minnesota, North and South Dakota, 62 per cent reported labor hired, and in the Corn Belt states of Iowa and Illinois 56 per cent so reported. Farmers who hire labor are likely to employ more when yields are high, and to get along without the usual hired labor when crops are very poor. The increase in expenses for harvest labor when yields are considerably above normal is probably much greater than the decrease when yields are considerably below normal. Expenses for threshing and ginning vary from year to year closely with yields per acre, except where the cotton gins or threshing machines are owned by groups of farmers, or where the charges are by the hour. The increasing use of harvesting machinery is tending to reduce the effect of variations in yields on farm expenses. The cost of operating a combined harvester-thresher is very little greater with large yields than with small yields. The same is true of the use of mechanical corn-husking machines. As potato- and cotton-harvesting machinery is perfected, the expenses of producing these crops will come more and more nearly to a per acre basis regardless of yield. In general, therefore, the total expenses per acre for producing corn, wheat, cotton, oats and potatoes do not increase greatly as yields increase, and hence the expenses per bushel or pound decrease rather rapidly.

Although no satisfactory data are available showing how the two types of expenses vary with yields when combined, an idea of it may be gained by assuming that the average cost of threshing wheat and oats in the United States is 5 cents per bushel, and of husking corn 7 cents per bushel, and that other costs remain the same regardless of yields. On these assumptions, total farm expenses would increase and decrease as follows with changes in yield:

Changes in yield	Changes in crop expenses		
	Wheat, thousand dollars	Oats, thousand dollars	Corn, thousand dollars
	Above normal		
Percentage above normal: 20	8,200	13,200	36,880
10	4,100	6,600	18,440
	Below normal		
Percentage below normal: 10	4,100	6,600	18,440
20	8,200	13,200	36,880

For cotton and potatoes in the table following, the ginning expenses of cotton and one-third of the other harvesting and marketing expenses of both have been assumed to vary directly with yields:[7]

Changes in yield	Changes in crop expenses	
	Cotton, thousand dollars	Potatoes, thousand dollars
	Above normal	
Percentage above normal: 20	32,928	10,094
10	16,464	5,047
	Below normal	
Percentage below normal: 10	16,464	5,047
20	32,928	10,094

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[7] These costs were worked out as follows: For the absolute level of costs the average price of an average crop was taken, on the assumption that for a period as long as this, these should be nearly equal, with wages of management being included as a cost. There will be those who argue that this represents a too high level, and others the contrary of this. It gives results which are not very wide of the mark; and besides no other data are available that will serve the purpose in question. Moreover, it

So far as prices and gross values of any one crop are concerned, a large crop has the same effect whether due to favorable weather or to a large acreage. But when one starts thinking of the farm business as a whole and of the expense side of the problem, one must make a distinction. A large acreage of wheat in a small-grain region ordinarily means a smaller acreage of oats or corn or some other crop. More winter wheat in the southern Corn Belt means less corn. More cotton ordinarily means less corn. If a corn crop 5 per cent above normal is reduced to normal, assuming normal yields per acre, and the same acreage added to a wheat crop 5 per cent under normal, the gross income from the two would be increased $54,000,000 (corn $6,000,000 more; wheat $48,000,000 more). If it were added to a wheat crop 15 per cent under normal, the gross income from the two would be reduced $2,000,000 (corn $6,000,000 more; wheat $8,000,000 less). If the same decrease in corn acreage were added to a normal oats crop, again assuming normal yields, the gross value of both would be reduced $6,000,000. If it were added to an oats crop 15 per cent under normal, the gross value of both crops would be increased $15,000,000. Increasing the corn crop to 5 per cent above normal and taking the acreage out of a cotton acreage 15 per cent above normal would add $47,500,000 to the gross value of the two crops (corn $6,000,000 less; cotton $53,500,000 more).

Accompanying these shifts in acreage would be some changes in costs. They might not be very important if each farm made only the 5 per cent shifts above assumed. But this is not the way shifts occur. Instead, a part of the farmers make rather large shifts and the rest make none. The corn crop takes more labor than the wheat crop, but less than the cotton crop. If only family labor were involved, the difference would be in how hard the family worked. But changing the proportion of crops may make the work pile up at certain seasons so that extra labor

is not the absolute level, but the variations with size of crop that concern us. The separations of the total costs into those proportional to yield and those not were made on the basis of the data published by the United States Department of Agriculture 1927 Yearbook, pp. 1144 and 1145; 1926 Yearbook, pp. 1135, 1138 and 1141; 1925 Yearbook, pp. 1215, 1212 and 1209; 1924 Yearbook, pp. 1328, 1330 and 1334; 1923 Yearbook, pp. 1134, 1135 and 1137.

may then be needed; or an extra team of horses may be required, or a tractor, if the crop is to be planted and harvested in good season. Existing machinery may or may not handle the enlarged acreage on any given farm. It is impossible to estimate the effects of these on costs because one cannot say on what farms the changes would be made; and if one could, the facts as to the labor, equipment, land, etc., available on these farms are not on record. What one needs to know is how much the total expenditures of the farms making the changes would be increased or decreased by them, so that this can be balanced against the increase or decrease in gross income from the two crops.

Some of the land may be better suited to the present crop than to the one that is substituted for it—in which case less than normal yields will need to be assumed. The change may affect the livestock enterprises which are built upon the crop enterprises. These and a score of other factors may need to be taken into account in analyzing effects of changes in acreage.

To the extent that an overplanting surplus results not from taking land from other crops, but from putting new land into crops, as with wheat during the World War, and with cotton since, the costs that need to be balanced against the increase in gross value of the crop in question are those involved in growing the crop on this new land. Such land is likely to be poorer than that now in use; but methods based upon power and machinery may be developed that will enable such land to produce economically.

Mention must also here be made of those elements in surplus which result not from more favorable weather or from a large acreage, but from using more fertilizer or better care of the crop. As in the production on new land, they add to the gross value of any one crop without affecting the supply of the others—except to the extent that they rob them of labor and capital. They add to expense much like crops grown on new land. Oftentimes it is cheaper to add to the product in this way than to break in new land. There is always competition between these two ways of adding to the product; and, in theory, they are kept more or less in line with each other.

The change in the net values of crops accompanying various sized crops, in so far as these are due to weather and other uncontrollable factors, would be roughly as indicated in Table 11.

TABLE 11.—EFFECT OF WEATHER SURPLUSES ON NET VALUES OF CORN, COTTON, WHEAT, OATS, AND POTATO CROPS AT 1928 PRICES AND IN TERMS OF 1928 NORMAL CROPS*

(In millions of dollars)

Percentage of normal crop	Corn			Cotton			Oats		
	Gross value	Expense	Net value	Gross value	Expense	Net value	Gross value	Expense	Net value
80	2,063	2,079	−16	1,222	1,085	137	540	531	9
85	2,103	2,088	15	1,193	1,094	99	547	534	13
90	2,130	2,098	32	1,166	1,102	64	550	537	13
95	2,146	2,107	39	1,139	1,108	31	556	541	15
100	2,152	2,116	36	1,114	1,118	−4	554	544	10
105	2,146	2,125	21	1,090	1,128	−38	548	547	1
110	2,130	2,134	−4	1,067	1,134	−67	545	551	−6
115	2,104	2,144	−40	1,045	1,142	−97	534	554	−20
120	2,069	2,153	−84	1,024	1,151	−127	519	557	−38

Percentage of normal crop	Potatoes			Wheat		
	Gross value	Expense	Net value	Gross value	Expense	Net value
85	596	485	111	935	963	−28
90	551	488	63	912	965	−53
95	521	490	31	933	967	−34
100	494	493	1	962	969	−7
105	461	496	−35	988	971	17
110	427	498	−71	1,015	973	42
115	398	501	−103	1,036	975	61
120	364	503	−139	1,053	977	76

* The *average* value of crops is taken as measuring the average expenses of producing a normal or average sized crop. This is slightly different from the usual assumption that expenses of production equal the value of a normal crop. It is, however, a more accurate assumption, since the value of a normal corn crop, for example, is greater than of either smaller or larger crops.

It will be observed that the assumption has been made that the expenses and prices of an average crop are the same. If a lower level of expenses were assumed, all the plus net values would be higher and the minus net values would be less. If a higher level of expenses were assumed, the opposite effect would be produced. The relative differences would be the same in all cases. The net values vary more than the gross values, because large crops have larger harvesting and marketing expenses to combine with the lower gross values of all but the wheat crop.

While these estimates have been made as carefully as possible, it seems clear to the authors that they exaggerate the range in net values. Under the actual conditions under which harvesting operations are carried on, with much of the extra labor of larger crops furnished by the farm family, and power machinery being increasingly used, expenses probably do not increase at the rate indicated by the data.

The gross and net values accompanying changes in size of crops due to shifts in acreages between this and other crops, or expansions on to new land, or contractions, or more or less intensive cultivation of the crops, cannot even be estimated roughly. *In general, the costs accompanying such changes are more than proportional to size of crop, and have made the larger crops of cotton and potatoes still more unprofitable. They reduce the advantage from larger crops of wheat, and make large crops of corn and oats more undesirable than small ones.* If the larger crops are due to using more fertilizer rather than planting more acres, these effects will ordinarily be less pronounced, since most of such additional production is this side of least-cost or highest-profit production. The cost line may rise not much faster than when the larger product is due to good weather.

EFFECTS OF PRICES ON SUBSEQUENT PRODUCTION

All of the foregoing analysis relates to the effect of size of crop on prices and income. Of equal significance in all programs for orderly production and marketing is the effect of prices upon the acreage planted, care of crop, and production in the year following and later. This sort of analysis is very difficult. The wheat acreage, for example, may have decreased for many reasons other than a relative decline in price, such, for example, as the following: increasing damage from pests and disease, increase in price of competing crops, improvements in varieties or adaptability of competing crops, increasing wages for harvest labor, and improvements in machinery for handling competing crops. For any particular season, the acreage of corn may be affected by the peculiarities of the season; for example, a late spring may have reduced the acreage of small grain and increased the acreage of corn; or a hard winter may have killed out the winter wheat or the clover seeding. The type of autumn affects the acreage of winter wheat. Some of these variations can be measured statistically and included in a correlation analysis; but some of them cannot.

A second difficulty is that farmers do not know whether prices any given year really are high or low. A price may seem high, yet really be low for the volume of production. If it were possible to determine whether prices really were high in a given year in view of the production, and were continuing high for the next year or two, and producers were all aware of this fact, the response would be different from what it is now. Any response which is measured statistically must be in terms of the reactions which farmers habitually make in the present state of their enlightenment on the subject. They are not likely to judge two series of high prices alike, for the reason that no two such series will be altogether alike—they will vary in duration, level of prices, sequences of changes, and other accompanying circumstances.

The matter of duration is of prime importance. It is conceivable that a high price for 1 year only, especially if apparently to be accounted for by a low yield, would have no effect on the acreage of the succeeding year. With some crops, however, high prices even for 1 year, and even though entirely due to yields, do seem to have produced tangible effects on subsequent production.

High prices for 2 years in succession will have a much greater proportionate effect, and for 3 years in succession, a still greater proportionate effect. The duration of the series is, therefore, probably as important as the amount of the change in price. What is wanted is the amount of response that follows the first year, the second year, the third year, etc. If the change in prices is merely temporary, lasting for 2 years, let us say, the response will be headed off before it has all happened.

The time of the response will vary for different commodities. The acreage of an annual cash crop that requires little special equipment or skill can be increased quickly. But if the shift requires reducing the acreage of feed crops needed for an established livestock industry, it will proceed much more slowly. If it requires largely revising a system of crop rotation, it will proceed more slowly. If the product is a continuous one, like milk, the output can be increased up to a certain point rather quickly by feeding more feed or better feed, and by milking cows that would otherwise have been slaughtered or turned over to the calves. A large increase, however, must wait upon the growing up of young stock.

The response may be in terms of greater intensity in cultural practices, and the like, as well as in terms of increased acreages. Not till effect of prices on intensity is also included will it be possible to measure the full effect on volume of production. With annual crops, the immediate response will be mostly in terms of acreage; with perennial crops, such as orchard crops, it will be mostly in terms of intensity. The final response in both cases will be in terms of both acreage and intensity.

The practical difficulty with this problem which will be most frequently pointed out is that it is possible by propaganda to modify greatly the effect of price changes. It is surely true that as time goes on, and this and related problems are better understood, and farmers learn from experience that production programs recommended to them by responsible extension agencies are well founded, acreages will be greatly influenced by such means. But even this influence will in due time be more or less measurable.

Attempts have been made to measure the amount and time of response of production to prices of cotton, wheat, corn, potatoes, and several other products; but none of the analyses is thorough and the results are all tentative. The nature of them can be illustrated by Bradford B. Smith's analysis of the problem for cotton. One of the first difficulties is the changing price level. Did growers respond the same to a 2-cent change in prices in 1918 as in 1910? The answer is probably "yes" for the first year or two after price levels changed. Mr. Smith has assumed that growers adjust their reactions almost at once after changes in the price level, and has accordingly deflated all the prices by dividing them by the index numbers of the Bureau of Labor Statistics. Does a 2-cent higher price have the same effect when it starts from 20 cents as when it starts from 11 cents? Mr. Smith has assumed "no" in this case. His data are for the years 1902 to 1926. For prices, he has taken the December average price of the March future as most likely to express the grower's estimate of the price situation at the time he is doing his reacting as to next year's planting. His conclusions may be summarized as follows:

An 18-cent price per pound (in 1913 dollars) in this period was followed on the average by a 6 per cent larger increase in acreage the first year than a 16-cent price. If the 18-cent price continued for a second year, the acreage of cotton increased 12 per cent more than if the price was only 16 cents for the two years. A 13-cent price was followed by a decrease in acreage of only 2 per cent compared with a decrease of 5 per cent when the price was 11 cents. The continuation of a 11-cent price for two seasons in succession resulted in an acreage about 7 per cent smaller than a price of 13 cents for the 2 years. Taking all prices of cotton, an increase in the deflated price of cotton 2 cents, or about 3 cents at the present level of farm prices, caused an average increase in acreage of around 4 to 5 per cent the first year, and close to 10 per cent the second year.

These reactions are the sort that growers have made under actual market conditions, with prices constantly in a flux, with no general understanding as to whether changes in the price level, or simply the supply and carryover, or temporary demand conditions, or more fundamental conditions of supply and demand, have accounted for the price of cotton at the time. If growers knew that prices had definitely risen to a new higher level because of new commercial uses, or an effective tariff duty, the response would be much different.

Professors Warren and Pearson of Cornell have published statements as to several other crops as follows:[8]

Potatoes: 10 per cent changes in prices result in 1 per cent changes in acreages the following year.

Hay: 30 per cent changes in Dec. 1 New York farm prices changed acreages 2 per cent the following year, and 2 per cent more the year following.

Corn: 25 per cent changes in farm prices of corn in Iowa resulted in 2 per cent changes in acreage the year following.

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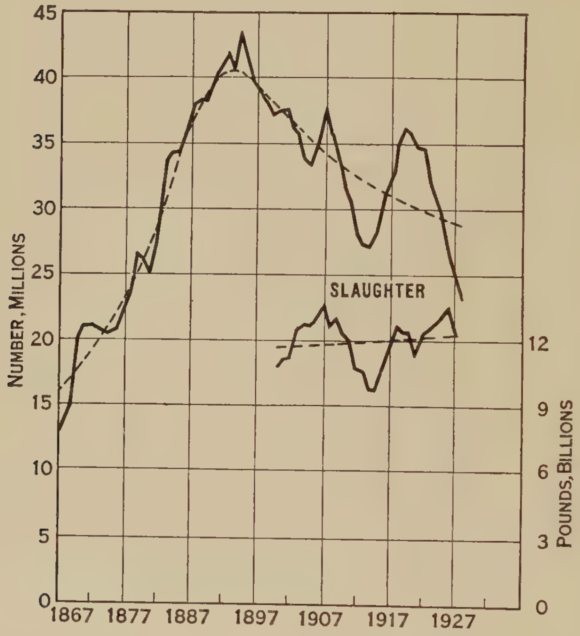
[8] *Interrelationships of Supply and Price, Bull.* 466.

Spring wheat: 25 per cent changes in prices tend to increase the acreages the following year 3 per cent, and the second year, 5 per cent.

CHART 15.—TRENDS AND DEVIATION FROM TRENDS IN NUMBER OF BEEF CATTLE * IN UNITED STATES (1867–1927) AND SLAUGHTERINGS † OF BEEF (1901–1927) IN THE UNITED STATES ‡



* On farms and elsewhere.

† Apparent consumption less imports plus exports. (Estimated live weight.)

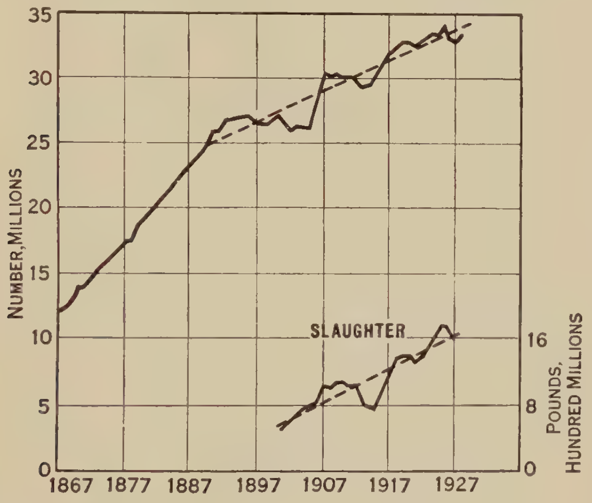
‡ Data from 1927 Yearbook of Department of Agriculture, Tables 333, 408, 466 and 467.

SURPLUSES OF LIVESTOCK AND LIVESTOCK PRODUCTS

As already indicated, the production of livestock and livestock products is more nearly under the control of farmers than the production of crops. The weather and other uncontrollable factors affect livestock production principally through changes in the quantity and price of feeds. When pastures are good, milk production increases and beef cattle make larger gains. When the production of roughage and grains is large, prices are low and farmers feed more freely. Milk production increases and beef cattle, hogs, and sheep are fed to heavier weights before being sent to market.

The full increase in production of livestock does not, of course, appear in the markets immediately following large crops of feed. Some of the feed goes into the growth of young heifers kept for milk and young beef cattle, and into enlarging the breeding herds of sheep, cattle, and hogs. Some time must elapse even before the effects appear on the animals fattening for the market. Some effect on milk production appears even in the first 6 months as a result of heavier feeding; but the full effects are 1 or 2 years in developing. The numbers of hogs and sheep are increased much more rapidly than the numbers of cattle. These circumstances are clearly reflected in the fluctuations in numbers of hogs, sheep, dairy and beef cattle on farms and elsewhere Jan. 1 by years from 1867 to 1928 shown in

CHART 16.—TRENDS AND DEVIATION FROM TRENDS IN NUMBER OF DAIRY CATTLE * IN UNITED STATES (1867–1927) AND SLAUGHTERINGS † OF CALVES (1901–1927) IN THE UNITED STATES ‡



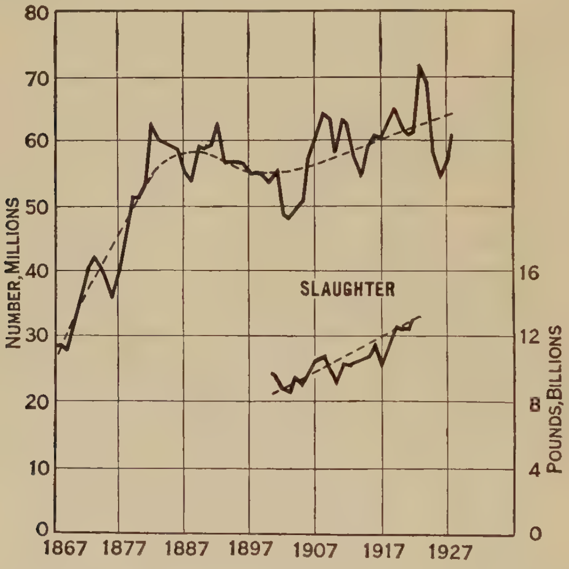
* On farms and elsewhere.

† Apparent consumption less imports plus exports. (Estimated live weight.)

‡ Data from 1927 Yearbook of Department of Agriculture, Tables 408, 422, 466 and 467.

Charts 15, 16, 17 and 18. The fluctuations in numbers of hogs are more frequent and more violent than those for the numbers of beef or dairy cattle. The numbers of sheep on farms show more extreme but less frequent variations than the numbers of hogs. The changes in the numbers of beef cattle on farms are more irregular than those for either hogs or sheep. There were major peaks in numbers of beef cattle in 1894, 1907 and 1919, and smaller peaks in 1872, 1879, and 1901. The numbers of dairy cattle have increased more rapidly than the numbers of hogs and more steadily than the numbers of the other livestock. Since the first peak in 1894, the variations in dairy cattle have been rather regular, first a general downward trend from 1894 to 1902, then an increase to another peak in 1907 to 1909, then a decline to 1913, etc. The continued upward trend from 1919 to

CHART 17.—TRENDS AND DEVIATION FROM TRENDS IN NUMBER OF HOGS * IN UNITED STATES (1867–1927) AND SLAUGHTERINGS † OF HOGS (1901–1927) IN UNITED STATES ‡



* On farms and elsewhere.

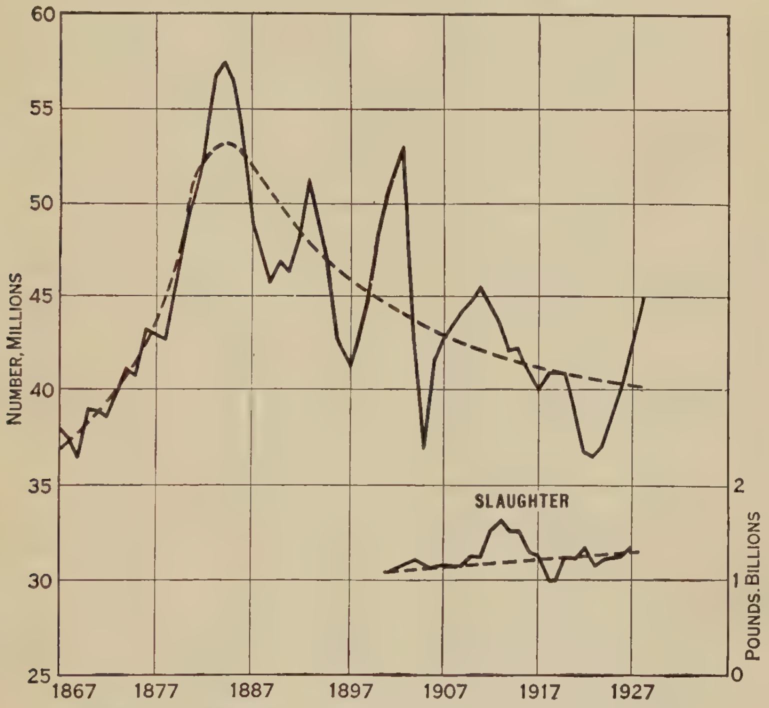
† Apparent consumption less imports plus exports. (Estimated live weight.)

‡ Data from 1927 Yearbook of Department of Agriculture, Tables 353, 408, 466 and 467.

1925, accompanying a very marked downward trend for beef cattle, is no doubt due, in some measure, to a reclassification of beef cows as dairy cattle.

The long-time trends shown in this chart are closely related to the agricultural development of the United States, changes in demand, and the relative profitableness of livestock production as a whole. The general upward trend in numbers of dairy cows and swine indicates an increasing intensity of farming in the United States. The loss in numbers of beef cattle and sheep indicates the passing of the country's frontier and cheap pastures. The World War undoubtedly was a factor in the unusu-

Chart 18.—Trends and Deviation from Trends in Number of Sheep * in United States (1867–1927) and Slaughterings † of Lamb and Mutton (1901–1927) in United States ‡



* On farms and elsewhere.

† Apparent consumption less imports plus exports. (Estimated live weight.)

‡ Data from 1927 Yearbook of Department of Agriculture, Tables 378, 408, 466 and 467.

ally large increase in numbers of beef cattle and hogs from 1914 to 1919; and increasing consumption of dairy products has been a factor in the continued increase in numbers of dairy cattle since 1919.

Since 1900, data are also available as to livestock slaughtered. These are presented in the inserts on each of the foregoing charts. For hogs, the trends are the same as for numbers on farms; but not for beef. The slaughtering of beef has apparently increased while the number of beef cattle has been declining. The reasons for the differences are the inclusion in the beef figures of a growing amount of slaughtering of dairy cows, a fuller reporting of slaughtering, and the selling of beef cattle at earlier ages. Reported lamb and mutton slaughterings have increased slightly since 1900, for somewhat similar reasons. There is also evidence in these data that slaughterings increase in periods when herds and flocks are being reduced. The increase in slaughtering of beef from 1921 to 1926 is partly explained by the reduction in herds going on at the time.

The major deviations from these trends in production of livestock and livestock products have probably been closely associated with changes in relative profitableness. The peaks in numbers of livestock shown in the above charts have, in general, been periods of low prices and unprofitable returns. This is brought out more clearly when the prices of these products are adjusted for changes in the general price level. Periods when prices of hogs or cattle are high relative to the general price level are followed by periods when the reverse of these conditions maintains; and there seems to be a rough regularity about the occurrence of these periods, suggesting that the time it takes to expand and contract production is an important factor in the problem. Ezekiel and Haas discuss this subject as follows:[9]

> When hog prices are high relative to corn prices, farmers are encouraged to increase their production of hogs. Although this increase in production takes place much faster than it does for most other livestock, still some time is required. If hog prices have been good in the summer and fall, and corn prices relatively low, many farmers may decide to produce more hogs. They breed more sows (or gilts) that fall than usual. Next spring there is a larger crop of pigs. Not until after those pigs have been fattened and shipped to market—most

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[9] "Factors affecting the Price of Hogs," *Dept. Agr. Bull.* 1440, p. 22.

of them during the following fall and winter—do the actual market receipts become larger because of the more favorable prices during the summer and fall of the year before. For this reason it takes about a year to a year and a half for changes in relative prices to have much effect upon the number of hogs sent to market.

Except during the war period, changes in the relation of hog prices to corn prices have been followed by similar changes in the receipts of hogs about a year and a half later. In 1906 and early 1907, hogs were high compared with corn; and in 1907 and 1908, receipts increased. In late 1907 and in 1908, hog prices were low compared with corn; and in 1909 and 1910, there was a marked falling off in hog receipts. After the war the same relation was again apparent; the high hog prices (relative to corn) in 1921 and 1922 were followed by increased hog receipts in 1923 and 1924, and the low prices of 1924 by reduced receipts in late 1925.

Unfortunately, however, this tendency of farmers to readjust their production to the price always seems to carry them too far in the other direction, because of the piling up of the changes before they are reflected in market receipts and in prices. Thus, in the spring of 1906, when hog prices (compared with corn prices) became favorable for the first time in several years, farmers increased the number of sows bred for fall farrowing. During that fall and winter the increased breedings had as yet had no effect on the market receipts or on the prices, and so with continued favorable prices breeding droves were still further increased in the fall of 1906 and the early spring of 1907. Then in late 1907 and 1908 these accumulated increases began to show up in larger and larger market receipts, prices were forced down, and conditions were once more unfavorable to hog production.

This explains the more or less regular "cycles" which have characterized hog prices ever since records have been kept. Starting with a period of corn and hog prices favorable to hog production, farmers breed more sows, and continue to increase their breeding stock so long as the current price relation is favorable, ignoring the fact that by the time the pigs will be ready for market the relation may have changed. Then when this accumulated increase in breeding finally appears as market receipts, the market for hogs is soon oversupplied, and hog prices become unfavorable. Hog producers begin to contract their breeding. But for some time thereafter the surplus of pigs resulting from the previous heavy breeding continues to reach the markets and hold prices low, and farmers continue to reduce breeding herds, in spite of the fact that the reduction in breeding stock already made will reduce the pig crop enough to bring hogs back to a profitable basis.

So the "cycle" tends to be self-perpetuating, each period of rela-

> tively favorable hog prices causing too great an expansion in production before prices become unprofitable, and each period of relatively unfavorable prices, which in the past has inevitably followed, causing too great a reduction in breeding before favorable prices are restored.
>
> The basic reason for the continuation of the hog-production cycle has been failure of producers to look ahead. Because corn is high and hogs are cheap right now is no reason to conclude the same situation will hold next year. There is no way to judge the future by the past. But apparently most hog producers have been so shortsighted in their view of the past that most of them have thought, or at any rate have acted on the assumption, that one year would be followed by another just like it, rather than by another just like those which previously had followed years when conditions were similar.

The time between periods of high prices for hogs is shorter than for cattle principally because of the larger number of pigs in a litter and the shorter period of maturity. Sheep mature about as rapidly as hogs, but reproduce less rapidly.

A statistical analysis[10] of the relation between feed costs, price of milk and monthly receipts of milk and cream at all dairy plants in Vermont from 1917 to 1926, inclusive, showed that:

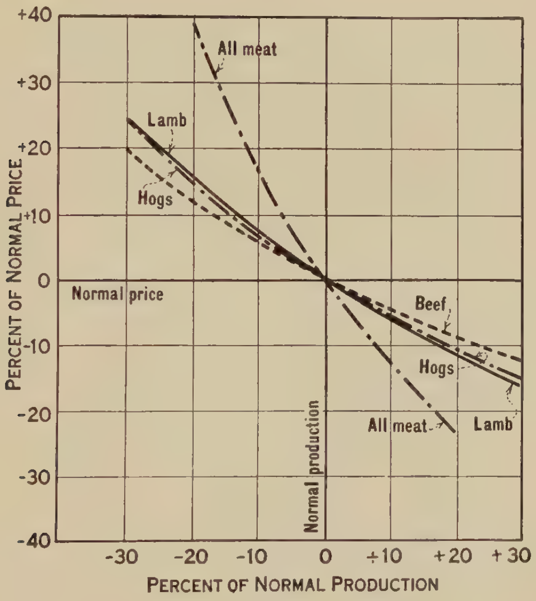
> For the winter period (November through April) an increase of 10 per cent in the ratio of milk prices to feed prices for the average of the last 12 months caused, on the average, 9 per cent increase in milk production 6 months later, and 2 per cent increase 18 months later. For the summer period, an increase of 10 per cent in the same ratio caused 7 per cent increase in production 6 months later and 5 per cent increase 18 months later. For both the summer and winter periods, therefore, the maximum effect on milk production came about a year later than the center of the prices which caused it, with some effect persisting until two years after the middle of the year for which prices were averaged.

It is clear from the foregoing that there is then a definite relation between livestock production and the prices of these products relative to cost, but it is clearly prices and costs at some earlier period. The periods of high prices and low prices are longer than for crops because of the longer time required to increase and decrease production.

[10] William A. Schoenfeld, Mordecai Ezekiel and others, "Marketing Milk and Cream in New England," *Dept. Agr. Circ.* 16.

Chart 19 shows the way in which prices of beef, pork, and mutton, and all meats combined vary with the supplies of these which come upon the market. Prices change much less with a given change in supply than in the case of crops, as is indicated by the gentler slope of the lines. The reason for this is that there are more substitute products for each kind of meat than for wheat or potatoes. When the price of pork rises, consumers shift to beef, mutton, or chicken. According to the chart, a 10 per cent increase or decrease in market receipts of hogs is accom-

CHART 19.—THE RELATIONSHIP OF MARKET SUPPLY OF BEEF, PORK, LAMB AND MUTTON AND ALL MEATS COMBINED TO PRICES IN THE WHOLESALE MARKET *



* The supply-price curve for hogs was worked out from Equation (4) on page 37 in *U. S. Dept. Agr. Bull.* 1440, "Factoss Affecting the Price of Hogs" by G. C. HAAS and MORDECAI EZEKIEL. The curve for lambs was worked out from Equation (2) of an article "Factors Related to Lamb Prices" by MORDECAI EZEKIEL in *Jour. Pol. Econ.*, Vol. XXXV, No. 2, p. 252. The curve for beef was worked out from the elasticity of demand 1.97 given by Dr. WARREN C. WAITE in his book "Economics of Consumption," p. 100. A straight-line logarithmic relationship was assumed.

panied by only a 6.2 per cent increase or decrease in price. This relationship apparently remains the same regardless of the amount of the supply. The same is true for dressed lamb except for supplies larger or smaller than shown in Chart 19. Within the range covered by the chart, a 10 per cent increase or decrease in the supply of lamb is accompanied by a 6.5 per cent change in price. The comparable figure for beef is 5.0 per cent; and for all meats combined, 14.6 per cent. Thus the price of pork changes most with a given change in supply, and the price of beef least. This is because pork is the least expensive form of meat, and most likely to be purchased by people in poor or moderate circumstances. The price of all meats combined changes much more like that of wheat and potatoes than does the price for any one class of meat considered by itself.

If we take as normal for each kind of livestock the production indicated for 1928 by the trend lines in Charts 15 to 18, and the average price for what seems to be the last complete cycle of high and low prices (adjusted for changes in the price level), we obtain the figures for gross value of different percentages of normal production shown in Chart 20.

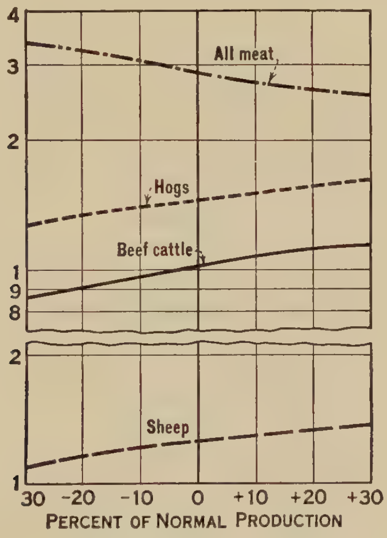
The normals thus derived were as follows:

	Normal Supply, hundredweight	Normal Price, dollars per hundredweight
Hogs	143,160,000	10.21
Beef cattle	140,170,000	7.36
Lamb and mutton	13,070,000	9.64

The relationships between supply and gross value resulting are like that for wheat: total value increases with supply. This means that the larger supplies generally sell for the most money. But the experience of the postwar years seems to point somewhat in the opposite direction. Unfortunately, not enough years have passed to furnish an adequate basis for such a conclusion.

Expenses of production, however, increase more rapidly with increases in supply than in the case of crops. The periods of heavy production of livestock are more like the periods of large acreage of crops than they are like the years when weather is favorable. This means that the total cost curve rises rapidly, proportionally to volume of production. There is even good reason to believe that the larger volume of production has higher unit costs. Let us consider the case of beef production first. A large production of cattle either takes land and feed away from other livestock or reaches out onto poorer pastures. Because periods of large and small production succeed each other, the young stock fed in the first part of the period of declining prices has been brought into the world and raised to fattening stage in a period of high prices for feed and high market value of the breeding stock. At the other end of the movement, low-cost young stock is available for fattening and sale at rising prices. Between these two ends of the movement will be a considerable period when only the relative cost of feed and prices of fattened stock will figure in the situation. An offsetting influence is that the increased rate of feeding when feed is cheap and beef high-priced results in larger gains per pound of feed. It no doubt also induces marketing at earlier ages, which is equally economical. The net effect of these contrary influences is an increase in costs at least proportional to volume, and probably somewhat in excess of this.

CHART 20.—RELATION OF SUPPLY TO GROSS VALUE OF HOGS, BEEF CATTLE AND CALVES, AND LAMB AND MUTTON *



* See text for definition of normal.

In the case of hogs, it has already been shown how the lag of a year to a year and a half in market receipts behind a favorable corn-hog ratio results in a period when feed is scarce relative to the supply of hogs, and a succeeding period when the reverse is true. This results in costs more than proportional to volume. The hog farmer who produces his own feed is interested primarily in the price which he gets for his feed when he sells it in the form of hogs. If the combination works out so that he has a relatively large supply of feed when prices of hogs are high, and this large supply of feed is due to favorable weather, then he receives a high return on relatively low-cost feed production. When the combination is the reverse of the foregoing, with feed scarce and prices of hogs low, he is in a position as unfavorable as the other was favorable. There is evidence to indicate that successions of good and bad corn crops are definitely related to the so-called corn-hog cycle, and that the large and small crops are mostly in the nature of weather surpluses. The gains and losses resulting are partly offset by the fact that growers feed their hogs to heavier weights when feed is cheap, with resulting larger inputs of feed per pound of gain in weight of the hogs; and that the opposite happens when feed is high. To the extent that the extra feed is due to larger planting, the unit costs of feed will tend to be higher and the advantages of high prices for hogs less pronounced. The short crops may, in part, have resulted from growing corn on fewer acres and these the ones best suited to corn. Another factor is that the pigs which a grower has ready for fattening when the volume is increasing have been produced at a high cost because the sows reserved for breeding could have been sold at a good price earlier. The conclusion from the foregoing must be that if a curve of costs were combined with that of gross values for hogs in Chart 20, it would rise much more rapidly, and that the large production would show a net loss. This relationship will be less pronounced to the extent that large supplies of feed and low prices of hogs, and the contrary, short supplies of feed and high prices of hogs, occur together, as they do every once in a while. This conclusion will hold whether the farmer grows his own feed or buys it.

Lamb and mutton cost curves should rise almost as rapidly as those for beef cattle, for reasons very similar but suggesting hog production in a few particulars.

With dairy cattle, the habit of most farmers to underfeed enters into the analysis. When feed is scarce and high priced, they are especially likely to underfeed. This has the effect of making unit costs higher than they otherwise would be in periods of short crops, and the contrary of this in periods of large crops. Other factors resemble those for meat types of livestock outlined above. The combined effect is that the cost line for dairy products does not rise as rapidly as that for meat animals.

CONCLUSION

The effect of the size of the crop upon the gross value of it depends upon the slopes of the curves showing the supply-price relationship. No curves yet determined are sufficiently accurate to enable one to estimate gross values with much precision. Nevertheless, the conclusion seems entirely safe that within the ranges of sizes that we have been experiencing *the gross values of cotton and potato crops have decreased with size, the gross values of wheat crops have increased with size and probably those of corn and oats crops have decreased in both directions from near the middle, although the data as to the latter are by no means conclusive. The gross value of annual meat production of all types has increased with volume, but at a diminishing rate; and the scanty postwar data point to a present tendency in the other direction.* Crops of cotton and potatoes could be so small that they would have smaller gross values than any yet grown; and volumes of livestock production could be so large as to sell for a smaller gross value than the large ones now marketed.

The information as to *variation in expenses* with volume of production is even less satisfactory than that for prices, but it justifies saying that *in so far as variations in size of crops are due to weather and related factors, the total expense of them increases with size, although by no means proportionally to it.* This has the effect of increasing the apparent advantage of small crops of cotton and potatoes and of large crops of wheat, and of shifting the advantage in corn and oats crops somewhat toward the smaller crops. The increases in sizes of crops due to expanding their acreage, whether by bringing new land into crop use or by taking land away from other crops, are likely to result in costs more than proportional to size, and increase the disadvantage of the larger crops of cotton and potatoes, decrease further the advantage of the large crops of wheat, and shift the advantage still more toward the small crops of corn and oats. Increases in sizes of crops due to using more fertilizer and labor on the same acres, as long as they add less to expenses than they do to the values of the crops, affect net values much like weather factors, except that they increase the total expenses more rapidly.

A preponderance of elements entering into the relation between volume of livestock production and costs points in the direction of costs rising more than proportionally to volume; and, hence, largest net values with the smaller volumes, though probably not with the very smallest volumes.

The variations in gross and net values of crops and livestock with volume of production are considerable, but by no means as great as one would judge from popular discussions of the subject, which focus attention too largely on prices and not on incomes, and upon the very exceptional years.

CHAPTER V

GAINS FROM HOLDING OVER TILL LATER YEARS[1]

The preceding chapter has indicated the extent to which producers of farm products find their gross and net incomes varying because of differences in the sizes of crops and volume of livestock production from year to year, with prices and marketings as they are under the functionings of our present marketing machinery. It is now being freely asserted that these variations in incomes can be reduced if special agencies are established for the purpose. The procedure suggested is to carry over a larger proportion of large crops to the next year or two, as need be. The assumption is that private agencies are at present overlooking opportunities for profits by increasing the carryover in such years; or that a large governmental or quasigovernmental agency would have some special advantages not now available to private agencies. The purpose of this chapter is to consider these possibilities.

At the outset, a number of distinctions need to be carefully made. The first of these is between the gains and losses which the growers might make in different years from having prices raised and lowered by increasing the carryover; and the gains and losses which the agency might make which handled the carryover. If a cooperative association including all the growers were to handle the carryover, it would make no difference, in theory, at least, which made the losses and gains. If the association lost, it could assess its members, or recoup itself from reserves withheld from previous crops. But such an association is inconceivable and, hence, the agency handling the carryover must stand on its own feet or else have its losses guaranteed by the government.

Second, one must decide definitely upon the control of the carryover. If a private agency were to decide to buy a million bales of any large cotton crop and hold it until the price was higher, this would still be part of the current supply and would affect the price much the same as if the agency had not made the purchase. Everybody would know that the million bales was available and would come on to the market any time the price rose enough to yield a profit to its owner. If, however, a government agency were to purchase the million bales and proclaim at the same time its intention to withhold it from the market until the next season, the effect on the present year's prices would be somewhat different. The mills and the dealers would add it to the supplies to be available next year in place of to the supplies available in the same year.

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[1] The analysis in this chapter was developed by Henry I. Richards.

But the mere purchase and holding of a million bales over to next year by a public agency might, in itself, affect carryover and prices very little. The world carryover of American cotton of the 1927 crop was 4,900,000 bales; of the 1926 crop, 7,758,000 bales; and of the 1925 crop, 5,501,000 bales. Having had a public agency buy a million bales of any of these crops would still have left an abundant supply for the current year's consumption. We cannot assume that the regular dealers would have carried over their usual supplies. Instead they probably would have contracted their purchases by a large fraction of the million bales; perhaps by all of it. If prices had risen when the public agency started its buying campaign, this would have been a signal for them to stay out of the market till the public agency had quit buying, for they would have realized that what the agency bought to hold in storage must come onto the market the next year.

The only way that a public agency could increase the carryover would be to buy heavily enough to more than offset the reduced purchases of the regular dealers. It is impossible to forecast what amount would be required for this. It is conceivable that the agency might have to buy up a large part of the carryover, and the dealers would confine themselves to buying for the current year's consumption. Before buying cotton to carryover, they certainly would weigh carefully their bids against their costs of carrying and next year's probable prices.

It is apparent from the foregoing that any discussion of the effects of buying and holding by a quasipublic corporation and any other type of agency is largely conjectural. We can proceed with it only by making assumptions. One of these can be that the purchases by the corporation do not affect the level of prices this year or next year. This would be the case if they were small and did not increase the carryover. In this case, the growers would make no direct gains from higher prices in the year of purchase, or losses in the year following. The corporation itself would make all the gains or losses; but it would pass these back to the member cooperatives if it were set up on this basis. The other assumption is that the corporation can and does buy so heavily as to increase the carryover and raise prices to growers this year.

GAINS WITH NO INCREASE IN CARRYOVER

Dr. Mordecai Ezekiel of the Bureau of Agricultural Economics of the Department of Agriculture has carefully analyzed the possibilities of gain from holding cotton and wheat on the first assumption.[2] He has assumed 500,000 bales of cotton and 100,000,000 bushels of wheat as amounts that a corporation could purchase without affecting prices at time of purchase or sale. In the period from 1900 to 1927, leaving out 1915 to 1920 as abnormal, there were 7 years when cotton prices were so much below the usual trend that there might have been "a reasonable possibility of selling at a profit within the next year." These years for cotton were 1901, 1902, 1911, 1920, 1921, and 1926. There were five such years for wheat, 1906, 1912, 1913, 1922, and 1923. Dr. Ezekiel concludes that the corporation would have obtained returns from the several cotton operations ranging from $4,000,000 to $18,000,000 profits above storage and interest (at 6 per cent); and ranging from $4,000,000 loss to $18,000,000 profit on the several wheat operations. But these were years in a period when the general level of prices of farm products was rising, especially the prices of wheat and cotton. From 1890 to 1914, cotton prices rose an average of about 0.75 cent per pound per year, or half as much as the cost of holding. Comparing 1926 to 1928 with 1910 to 1914, cotton prices at New Orleans have risen an average of a half cent per year. Such an increase in cotton prices can hardly be expected to continue in future years. The expansion of cotton production in Texas and Oklahoma, together with the improvement in cotton harvesting and cultivating machinery, point rather to an increasing production of cotton and a downward trend in prices.

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[2] A paper read before the American Farm Economic Association, December, 1928.

The selection of years in which to do the storing has much to do with the gains and losses from holding. One does not know one year what the yields will be the next. If the yields following a large crop turn out to be poor, notable gains will be made; if the reverse, equally large losses. Dr. Ezekiel did not choose 1925 as a year in which to figure gains from holding cotton. There is no reason why a corporation might not have chosen it. The average price of cotton on the New Orleans market in that year was only 1.8 cents per pound above the price in 1921—one of the years Dr. Ezekiel selected for storing cotton —and was 4.5 cents per pound below 1924 prices and 10.6 cents below 1923 prices. If 500,000 bales of cotton had been purchased in 1925 for sale in 1926, the loss from decline in price alone would have been $12,500,000. Storage and interest charges would have increased the loss to $16,250,000. Wheat might also have been stored in 1921 with resulting heavy losses.

The net profits estimated by Dr. Ezekiel above, if distributed to producers, would have raised the value of the cotton produced during those years by only 0.07 cent per pound, and the price of wheat by 0.10 cent per bushel. Such gains would not have helped farmers materially. A similar computation with oats gave similar results.

It is quite evident, therefore, that to be effective in increasing the returns to farmers, the corporation would have to store sufficient quantities so that its action affected the level of prices.

The conclusion would be different if it were possible for statisticians employed by the government to forecast acreage and yield better than private agencies are now doing it; or if the government were in a position to influence the acreage planted in the year following a large crop. This latter may be a real possibility and will be discussed later. So far as variations in production are due to shifts in acreage, the government may be in a somewhat superior position.

GAINS WITH CARRYOVER OF LARGE CROPS INCREASED

Now let us turn to the second assumption, that purchases are made in sufficient quantity to increase the carryover, and probably decrease the consumption, in years of large crops. If acreage could be decreased in the year of such increased carryover, the program would work out differently than under the conditions that actually have prevailed. The discussion at first assumes no such control but, instead, such acreages and production as in the past have actually followed such crop years.

The possibilities of such a program depend upon the relations of supply and price shown in Charts 12 and 19. If these curves are right, what is really taken out of any year's supply will raise the prices as they indicate and will lower prices as they indicate when added to the next year's crop. Thus taking away enough of a cotton crop 20 per cent above normal to reduce the available supply to 10 per cent above normal would raise prices in that year by about 1.7 cents per pound. As already stated, what amount of cotton this would have to be cannot be told because no one knows to what extent the dealers would reduce their purchases for storage. If we could assume that the dealers stored as much as before, then approximately 1,420,000 bales would have to be purchased. If these 1,420,000 bales were added to a normal crop of cotton the year following, prices would be reduced by about 2.1 cents a pound. If the dealers reduced their storage by one-half of the 1,420,000 bales, then the corporation would have to purchase 710,000 bales more. The effect on the prices in the two years would be the same whichever way it turned out.

The slope of the curves of supply price is what determines the amounts of these increases and decreases in price. If a curve is almost a straight line, the amounts added one year and subtracted the next will almost exactly equal each other. If the curve has a different slope at different percentages of normal production, then the increases and decreases will not be equal. As already indicated, none of these supply-price lines or curves is accurate or well established. Hence, none of the conclusions based on the slopes of these curves must be taken as highly authentic. They must be taken as illustrating the principle involved, rather than as stating a conclusion.

What the grower is interested in is the combined effect on the two crops. Does what he gains on one offset what he loses on the other? In the final analysis, it is the combined net values rather than the combined gross values of his two crops that he is concerned with. We shall also assume that he is interested in the combination of his own gains and losses with those of the holding corporation. The corporation's costs of storing the extra carryover must be charged against any profits, or added to any losses, from differences between the buying and selling prices of the carryover.

Any calculations of the effect of a program of enlarging the carryover must assume a crop of a certain size in the year taken and in the year following. The size of the two crops determines where on the curve for this product the increases and decreases must be figured. If the cotton crop the next year should turn out to be 10 per cent under normal, the 1,420,000 bales extra carryover would reduce the price the next year by 2.67 cents per pound. If it were a large crop, 10 per cent above normal, it would lower the price next year by 1.72 cents per pound. Any demonstration of the gains and losses from enlarging the carryover with large crops must take account of the facts as to the kinds of crop years that actually do follow large crops. A corporation having charge of such a program would have no means of knowing the size of the next year's crop except to the extent that acreage is responsible for variations in it and that acreage can be forecasted. In the discussion following, the effects of enlarging the carryover will be considered with large, normal and small crops in the year following.

Potatoes can be omitted from consideration, because of the large losses in storage when carried over from one year to the next.

According to the relationships shown in Chart 12, the total value of crops like corn and oats would generally be increased by enlarging the carryover in years of large supply. The increase in price caused in the year of large crop by withholding 10 per cent of it from the market would be exactly the same on the average as the decrease in price resulting when that amount was sold on the next year's market. But when these prices were multiplied into the size of crop in the two years, the result would be a larger value for the two crops combined. With a crop as short as 20 per cent below normal the year following, the growers and holding corporation could easily gain 1 cent per bushel from the operation.

TABLE 12.—ESTIMATED GAINS AND LOSSES FROM INCREASING THE CARRYOVER OF WHEAT AND COTTON 10 PER CENT OF A NORMAL CROP IN YEARS OF LARGE CROPS AND SELLING IN THE FOLLOWING YEAR

(In millions of dollars)

Crop	Percentage of normal crop		Change in value of crop			Gains and losses of holding corporation		
	Year of purchase	Year of sale	First year	Second year	Both years	Purchase and sale	Holding costs	Total
Wheat..	120	85	+ 54	−100	−46	+6	−21	−15
	120	100	+ 54	− 39	+15	0	−21	−21
	120	105	+ 54	− 42	+12	+2	−21	−19
Cotton..	120	80	+147	−194	−47	+34	−15	+19
	120	100	+147	−150	− 3	0	−15	−15
	120	110	+147	−134	+13	−12	−15	−27

The way in which increasing the carryover from a large crop of wheat or cotton would work out is outlined in Table 12. In all cases, a crop 20 per cent above normal is assumed for the first year, and enough is taken away—completely away so that it cannot come into the market again till next year—to reduce the supply to 10 per cent above normal. (The normal for wheat crop used was 821,000,000 bushels, at a normal price, 1.17 cents per bushel. The normal for cotton crop used was 14,200,000 bales, at a normal price of 16.38 cents per pound.) This would take 82,100,000 bushels of wheat and 1,420,000 bales of cotton. The effect of this extra buying is supposed to be like that of a rise in the demand schedule. The whole wheat crop of that year is supposed to be raised 5.5 cents per bushel in price in consequence, or $54,000,000 in total value. The corporation is supposed to pay this extra price for the wheat it buys, and all the growers to receive it too. The situation is not just that of a smaller crop selling for more money because of a higher price, but that of the same sized crop selling at a higher price per bushel. The result is an increase of $54,000,000 in the value of the wheat crop and of $147,000,000 in the value of the cotton crop. The corporation on these assumptions pays $92,000,000 for its 82,000,000 bushels of wheat, and $101,000,000 for its 1,420,000 bales of cotton.

If the year following has normal production and the 82,100,000 bushels of wheat are added to the supply, the price is lowered 4.8 cents per bushel on the new crop, with the result that the growers receive $39,000,000 less for it. As a result of the carryover transaction, the growers have received $15,000,000 more for the two crops. The corporation, however, has sold its 82,100,000 bushels of wheat for a total of $92,000,000, exactly what it paid for it. With carrying costs of $21,000,000, at 26 cents per bushel, it has lost $21,000,000 from its transaction.[3]

An important assumption is involved in both phases of this transaction; namely, that all the wheat the first year is at once raised in price the full amount, and all is at once lowered in the second year. The corporation might be able to buy considerable wheat at lower prices while prices were rising. If so, the corporation would gain, but the growers would not get the full increase in price allowed. In the year following, the extra carryover would be known and probably would depress prices from the start. To the extent that it did not, both growers and corporation would gain. These developments would change the results in the table very little. What they added to the corporation's gains would be more than lost by the growers.

Perhaps a more important assumption is that the dealers will not change the amount of their carryover the second year. Probably they would decide that with this extra supply unloaded on the market, a larger carryover would be warranted. Consequently, one needs to go clear over to the third year to catch all the depressing effects of such an enlarged carryover. These third-year effects are ignored in the analysis.[4]

If the crop in the year following is 15 per cent below normal, the price will be lowered 14.3 cents per bushel by the extra carryover—it will be $1.19 instead of $1.34—and the growers will obtain $100,000,000 less from their sales. The corporation will sell for 7.3 cents per bushel more than it paid, and make $6,000,000 in this way, which will partly offset its carrying costs. The comparable results, if the year following has a crop 5 per cent above normal are given in the third line. The growers would gain $12,000,000, but the corporation would lose $19,000,000. Thus, in none of these combinations would the extra carryover operations prove advantageous. These results are to a degree exceptional because of the bend in the wheat curve at 10 to 20 per cent above normal. If the extra carryover had reduced the supply of the first year from 15 to 5 per cent, instead of from 20 to 10 per cent, the growers would not have made gains no matter what the size of the following crop. The supply-price relationship is a straight line from 15 per cent above normal production to 5 per cent below.

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[3] These carrying charges are explained in Chap. VI.

[4] See discussion of this by Dr. Ezekiel in the paper above mentioned.

In the 42-year period covered in Charts 9 and 11, crops 5 per cent or more above normal were followed by crops 5 per cent or more below normal in five occasions; by crops 5 per cent or more above normal in four occasions.

A similar analysis for cotton shows no combination in which the growers could have gained, and one in which the corporation would have gained. The carrying costs used were 2.07 cents per pound. The extra carryover amounted to 1,420,000 bales, and it raised prices the first year by 1.72 cents per pound. The reductions in prices the year following were 3.42, 2.11, and 1.72 cents for the three sizes of crops, in the order given in the table. No other possible combination of good years followed by poor years would modify these conclusions. In the period covered in Charts 9 and 11, crops 5 per cent or more above normal were followed by crops 5 per cent or more below normal in 7 years; and by crops 5 per cent or more above normal in 2 years.

It might be interesting to apply this analysis to a few actual cases. In the 1926 to 1927 combination, when an 18,000,000-bale crop and 11-cent cotton was followed by a short crop of 13,000,000 bales, due in a measure to the Mississippi flood, and 20-cent cotton, the growers would have lost approximately $27,000,000 by increasing the carryover by 1,420,000 bales; and the corporation would have gained $4,000,000.[5] But in the

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[5] It may be estimated that the dealers would have increased their carryover 300,000 bales in 1927 if 1,420,000 more bales had been carried

1925 to 1926 combination of a large crop followed by a larger crop, the growers would have gained $102,000,000 and the corporation would have lost $51,000,000. Increasing the carryover from 1925 to 1926 by 1,420,000 bales would have reduced the 1925 market supply to about normal, but would have resulted in a very large market supply in 1926. In the 1911 and 1912 combination of a crop 20 per cent above normal followed by a normal crop, the growers would have lost $600,000 and the corporation would have lost $900,000 in addition to an estimated holding cost of $15,000,000.

The carryover of pork and pork products can be increased within certain limits, although it tends to be about the same from year to year, reflecting, for the most part, the amount of these products in the channels of trade at the end of the season of large receipts. According to the curve in Chart 19, increasing the carryover, if it were feasible, so as to reduce a large supply from 20 per cent above normal to 10 per cent above normal would increase the price of that year's production by 5.0 per cent of normal, or add 6.0 per cent of normal to its gross value; and would reduce the price of a normal supply the year following 5.7 per cent of normal, and the gross value of it by 5.7 per cent of normal. Assuming a normal price of $10.21 per hundred pounds for a normal supply of 14,316,000 pounds, the combined values would be increased $2,234,000. The corporation would sell at the purchase price and lose the cost of storage. If a normal production followed, the combined gross values of the 2 years would be $3,029,000,000 with present carryovers and $3,027,000,000 with the extra carryover. If a large production followed (10 per cent above normal) the comparable results would be $3,080,000,000 and $3,087,000,000, and $7,014,000 loss for the corporation from decline in prices alone. The results for beef, neglecting for the sake of argument the difficulties and costs involved in its carryover, would differ from those for pork in that the gains and losses would be slightly smaller. Lamb and mutton similarly analyzed would show results about midway between those for beef and pork, except for supplies larger or smaller than shown in the chart.

What about the effects of a policy of continuing the carry-

over from 1926; and this amount would have reduced prices in 1928 by 0.5 cent per pound, equal to about $40,000,000 of gross value.

over when good crops follow a good crop? Suppose the corporation adopted the policy of increasing the carrying in years of crops 10 per cent above normal and selling only in years when crops were 5 per cent or more below normal. Since 1899, cotton would have been held 4 years on one occasion, 2 years on another and 1 year on seven occasions; and wheat would have been held 2 years on three occasions, 3 years on one occasion, and 5 years on one. Waiting 1 year extra for a small crop of cotton would result in a gain of $4,000,000 to the corporation carrying over 10 per cent of a normal crop in any year when necessary. Waiting 3 years would have caused a loss of $11,000,000. Holding wheat over for 2 years in place of one and selling in a small crop year would have increased the losses of the holding corporation from $15,000,000 to about $36,000,000. The growers would lose by carrying over to a small crop year. Their interest would be in having the crop sold on top of the large crop in the first year following.

It has already been pointed out that low prices for cotton tend somewhat to be followed by reduced acreages. The extent to which this has happened in the past has been fully allowed for in the above method of analyzing the problem. Without this relationship, there would have been fewer small crops following large than actually occurred. With wheat, the tendency for acreage the year following to reflect prices is very slight, but whatever tendency there is has likewise been fully counted.

Now we come to the possibility of reducing planting in the year following. Secretary Jardine has made a strong point of this in his arguments for stabilization corporations. The farmers can be definitely informed that the corporation is holding 3,000,000 bales of cotton, and that the acreage must be reduced enough to make up for this, unless the growers want prices as low as those that would have prevailed in the current year if the carryover had not been enlarged. It seems probable that such a program could be made effective to some extent at the start, and more effective in succeeding years, although the experience of the Department of Agriculture with its outlook reports does not justify any large hopes of this sort.

Before allowing too much for it, even if it could be made effective, we must consider the possible advantages. Suppose that the acreage for cotton or wheat was reduced 5 per cent of normal more than at present in years following large crops when the carryover had been increased 10 per cent as above indicated, so as to reduce the market supply from 20 to 10 per cent of normal, and yields the following year were: (*a*) 5 per cent above normal, (*b*) normal, or (*c*) 5 per cent below normal. The resulting production would be 4.5, 10, and 14.5 per cent below normal. Cotton and wheat growers and the holding corporation would lose and gain as shown in Table 13.

TABLE 13.—ESTIMATED GAINS AND LOSSES FROM INCREASING THE CARRYOVER OF WHEAT AND COTTON 10 PER CENT OF NORMAL IN LARGE-CROP YEARS WHEN ACREAGE IS ALSO REDUCED 10 PER CENT OF NORMAL THE FOLLOWING YEAR

(In millions of dollars)

Crop	Percentage of normal crop		Change in value of crop caused by carryover and acreage			Gains and losses of holding corporation		
	Year of purchase	Year of sale	First year	Second year	Both years	Purchase and sale	Holding costs	Total
Wheat	120	85	+ 54	− 97	−43	+ 6	−21	−15
	120	90	+ 54	− 96	−42	+ 4	−21	−17
	120	95	+ 54	− 93	−39	+ 2	−21	−19
Cotton	120	85	+147	−125	+22	+24	−15	+ 9
	120	90	+147	−116	+31	+15	−15	0
	120	95	+147	−108	+39	+ 7	−15	− 8

If a stabilization corporation could by increasing the carryover in large crop years cause the same percentage decrease in acreage of cotton planted the following year, cotton production would be reduced and the total value of both crops increased. But acreage reduction following large crops is a separate program, capable of being undertaken without any reference to an enlarged carryover program. To the extent that it is possible to reduce acreage in such years, gains can be realized from it, but they should be attributed to it and not to the carryover, except in so far as the extra carryover becomes a useful weapon to use in reducing the acreage. A powerful offsetting influence would be the disposition of the growers to plant more in the year following merely because of the higher prices that had been made to prevail. If such a program was carried out successfully following several large crop years, the total value of cotton crops per acre would be increased. This would probably be followed by an increase in acreage in other years. Since the total value of the wheat crop increases with size of crop, there would not be the same gain to growers from reduction in acreage.

The succeeding year's livestock production does not fluctuate violently with the weather, but rather follows a short-time tendency to increase at certain periods and decrease in others. In general, a holding program would have to expect still larger production except in the downward turn in the cycle. One would judge from Charts 15 to 18, that larger production of beef could be expected in 8 out of 17 years when production was above the normal or trend line; of lamb and mutton, 7 out of 17 years; and of pork, 4 out of 11 years. The effect of the carryover program under such circumstances would be to increase slightly the gross value of production for each 2-year period when the trend of production was upward, and reduce the gross value to producers when the trend of production was downward. The holding corporation, on the other hand, would lose when the trend of production was upward, but would gain when the trend of production was downward.

GAINS FROM INCREASED CARRYOVER OF SMALL CROPS

Although the advocates of enlarged carryover have not contemplated the withholding of larger amounts of short crops and selling them in the years following, nevertheless we must consider the effects of such a program if we are to be honest with ourselves. Table 14 presents the results of such an analysis. Take wheat for our first example. The normals used for wheat above were 821,000,000 bushels and $1.17 per bushel. On the average, a crop 5 per cent below normal would sell for $1.20 per bushel. Decreasing such a supply to 15 per cent below normal would increase the price to $1.34. Adding this amount to a crop 10 per cent above normal would decrease the price to $1.07 per bushel. The gross value of the first crop would be increased $112,000,000, and of the second crop would be reduced only $50,000,000, making a gain of $62,000,000. The holding corporation's losses on this program at 26 cents per bushel per year storage costs would be 53 cents per bushel on 82,100,000 bushels or $44,000,000. The net gain to producers from both sources would be $18,000,000, or 1.1 cents per bushel. If the crop following proved to be a normal crop, the combined gross values would be increased $73,000,000 and the corporation would lose about $39,000,000. If the crop following proved to be short by 10 per cent below normal, the combined gross values would be increased $63,000,000. But the corporation would lose only $35,000,000. The gain from all sources would be $28,000,000.

TABLE 14.—ESTIMATED GAINS AND LOSSES FROM INCREASING THE CARRYOVER OF WHEAT AND COTTON 10 PER CENT OF A NORMAL CROP IN SMALL-CROP YEARS AND SELLING IN THE FOLLOWING YEAR

(In millions of dollars)

Crop	Percentage of normal crop		Change in value of crop			Gains and losses of holding corporation		
	Year of purchase	Year of sale	First year	Second year	Both years	Purchase and sale	Holding costs	Total
Wheat..	95	110	+112	− 50	+62	−22	−21	−43
	95	100	+112	− 39	+73	−18	−21	−39
	95	90	+112	− 49	+63	−14	−21	−35
Cotton..	95	110	+204	−134	+70	−57	−15	−72
	95	100	+204	−150	+54	−45	−15	−60
	95	90	+204	−171	+33	−30	−15	−45

For cotton, the results of a similar carryover program would be a net increase in gross value of both crops when large crops followed of $70,000,000 to the growers, and a net loss of $72,000,000, including carryover charges of 2.07 cents per pound, for the corporation. If normal crops followed, the comparable figures would be $54,000,000 and $60,000,000, respectively; and if small crops followed, $33,000,000 and $45,000,000, respectively.

It is highly probable that the dealers would increase their carryover the second year if such a program was followed, which would distribute the effects over 3 or even 4 years instead of just the two, so that the gains would be considerably less than those here indicated.

The reason for the foregoing results is that the slopes of the curves for wheat and cotton are such that making a short crop still shorter adds more to its value than making a large crop in the following year still larger subtracts from its value. The corn and oats curves would not work out this way. Those for beef, pork, and lamb and mutton would all result in a decrease in gross value for both years; but the corporation might make a small profit when production the following year was very small.

It follows from the foregoing, that the way to raise incomes from the sale of many farm products is to enlarge the carryover not in years of large crops, but in years of short crops—quite contrary to the common belief. But this would *unstabilize the prices*—make them higher in short-crop years and lower in large-crop years. The holding corporation would always lose money from such a program. It would buy high and sell low. If all the selling were handled by a huge cooperative association in which all growers were members, the losses could, in theory, be collected from the growers and the members would still have handsome gains left. But needless to state, the program would be one of monopoly practice, and would be subject to attack under the Capper-Volstead Act. If a government agency were to undertake such a program, it would need to set up high tariff barriers to keep products from coming in years when short crops were made still shorter. Also all the supposed ill effects of alternating high and low prices upon production, over- and under-planting, would appear. National consumption would also be uneconomically distributed—deprivation in some years and waste in others. One would not want, therefore, to advocate such a program seriously.

NET INCOMES AND CARRYOVER

If the foregoing analysis were worked out in terms of net incomes in place of gross incomes, the conclusion would be the same as to the economy of enlarging the carryover of both large crops and small crops. But the distribution of growers' net incomes between years would be rather different than that of the growers' gross incomes. This can be illustrated by applying the data for expenses of production of different-sized crops of cotton given in Chap. IV to the crops assumed in Table 12, above. The crop of cotton 20 per cent above normal would show a loss of $127,000,000. Carrying over 10 per cent of a normal crop in such a year would make it show a gain of $20,000,000. Thus, the carryover program would have made a large crop show a gain rather than a loss. A crop 20 per cent below normal at present sells for a price that gives a net gain of $137,000,000. If 10 per cent of a normal crop was carried over from the preceding year and added to this crop, the lower price resulting would convert the net gain to a loss of $57,000,000. Thus the assumed carryover program would reverse the net gains and losses from what they are now, just as it would the gross incomes; but the combined net gain of the two years of $10,000,000 caused by the carryover program would be changed to a loss of $37,000,000, and the difference in net values of the two crops would be $264,000,000 under present marketing and $77,000,000 with the carryover program. A carryover of 1,136,000 in place of 1,420,000 bales would make the net values of the two crops about equal. If the crop following turned out to be another large one, 10 per cent above normal, net values the second year would be reduced from a loss of $67,000,000 to a loss of $201,000,000. The difference in net values of the two crops would be $221,000,000 compared with $60,000,000 under present marketing. The higher prices caused by an increase in carryover in years of large crops would tend to offset the increase in expenses caused by large yields. Net values of cotton crops would tend to be more nearly stabilized from year to year than at present.

The same carryover program applied to wheat would increase the fluctuations in net values from year to year. A crop of wheat 20 per cent above normal now shows a net profit of $76,000,000. Carrying over 10 per cent of a normal crop would make it show a profit of $130,000,000. Adding the increase in carryover to a crop 15 per cent below would increase the present loss of $28,000,000 to a loss of $133,000,000. The difference in net value of the two crops under present marketing would be $104,000,000 and $263,000,000 with the carryover program. In order to stabilize net values of wheat, the carryover must be increased in years of small crops.

TO STABILIZE INCOME

The supposed objective of most programs of price, carryover and production control is to stabilize incomes. The program last described of enlarging the carryover in years of short crops would of course make gross incomes more uneven—except in the case of wheat crops, whose gross value it would stabilize as well as enhance, since the prices of short crops at present are not high enough to offset the lower volumes, and such a carryover program would make them more nearly so. It should be remarked at this point that the contrary program of enlarging the carryover of wheat in years of large crops would have the effect of unstabilizing wheat incomes whenever the succeeding crops were normal or below. For corn and oats, the difference between the gross values and likewise net values of short and normal crops and large and normal corps is not so great as to make further uniformity a matter of moment. For the cotton crop, and other crops with a similar supply-price curve, the way to stabilize income is to increase the carryover in years of large crops; but gross and net values will be reduced at the same time. The growers of these crops need to choose between more stability of income or less income. Which will it be?

The additional carryovers that would have been necessary to have maintained a constant, or nearly constant, trend in values of past cotton crops can easily be estimated by using the relationships between supply and prices worked out by Bradford Smith, and presented in the curves given earlier. The problem is to determine what carryover would have left a crop that would have sold for the normal or trend values for the different years. What this trend value was for any year was ascertained by fitting a trend line to the values of nine preceding crops. This trend value so determined was divided by the actual crop of the year to obtain the price at which this size of crop would have had to sell to bring this trend value.[6] The difference between this price and the actual price at which the year's crop was sold is the basis for determining the increase or decrease in carryover that would have made the crop sell for the trend value. The following Table 15 presents the results of such an analysis for the years 1899 to 1927.

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[6] See Appendix, Note *A* for explanation of method.

TABLE 15.—CHANGES IN CARRYOVER AND PRICE OF COTTON NECESSARY TO HAVE YIELDED MOVING TREND VALUE OF COTTON CROP EACH YEAR, 1899–1927

Year	Increase, thousands of bales	Decrease, thousands of bales	Stocks at end of year, thousands of bales	Actual carryover in U. S., thousands of bales	Farm price of cotton Dec. 1, cents per pound	Farm price necessary to yield moving trend value Dec. 1, cents per pound
1899	686	....	686	....	7.00	7.54
1900	....	2,189	−1,503	....	9.20	7.11
1901	2,606	....	2,606	....	7.00	9.39
1902	1,251	....	3,857	....	7.60	8.69
1903	....	1,482	2,375	....	10.50	8.75
1904	....	1,865	510	1,935	9.00	7.37
1905	....	329	181	1,349	10.80	10.36
1906	....	178	3	1,515	9.60	9.41
1907	1,072	....	1,075	1,236	10.40	11.89
1908	1,523	....	2,598	1,484	8.70	10.31
1909	323	....	2,921	1,040	13.90	14.49
1910	....	1,105	1,816	1,375	14.10	12.20
1911	650	....	2,466	1,777	8.80	9.44
1912	....	485	1,981	1,511	11.90	11.25
1913	....	756	1,225	1,833	12.20	11.15
1914	4,257	....	5,482	3,936	6.80	10.40
1915	2,355	....	7,837	3,140	11.30	14.88
1916	....	603	7,234	2,720	19.60	18.35
1917	....	1,880	5,354	3,450	27.70	22.65
1918	....	1,098	4,256	4,287	27.60	24.73
1919	....	1,872	2,384	3,563	35.60	29.33
1920	5,460	....	7,844	6,534	13.90	22.53
1921	3,787	....	11,631	2,832	16.20	25.52
1922	....	1,643	9,988	2,325	23.80	19.76
1923	....	3,283	6,705	1,556	31.80	20.43
1924	....	1,852	4,853	1,610	22.60	18.48
1925	....	999	3,854	3,543	18.20	16.64
1926	3,611	....	7,465	3,762	10.90	14.95
1927	277	....	7,742	2,536	19.60	20.22

Changes in demand connected with the opening of the War in Europe rather than in supply account largely for the abnormal carryovers in 1914 and 1915. Similar disturbances arose following the World War. If supply alone had to be considered, the carryovers need not have been so large. A corporation handling the carryovers probably could not anticipate the demand changes at the start of a marketing season.

The expenses which the corporation would have incurred from the additional carryovers, and its losses and gains from price changes, with the carryovers indicated in Table 15 above, would have averaged as in Table 16.

Table 16.—Average Annual Reductions in Gross Cotton Income from Stabilizing Them for the Period 1899 to 1927

(In thousands of dollars)

	1899 to 1913 period	1914 to 1927 period, full carryover	1914 to 1927 period, half carryover in 1914, 1915, 1920 and 1921
Holding costs	9,228	69,709	18,076
Losses on purchases and sales	5,292	2,588	3,052
Total corporation costs	14,520	72,297	21,128
Reduction in gross value of crop	1,810	13,471	14,327
Total losses	16,330	85,768	35,455
Percentage losses of gross value	2.6	7.0	2.1

The estimates in Table 16 are not offered with any claim as to high authenticity. They do, however, make clear the nature of the problem; and they are surely to be relied upon to the extent that they indicate that the losses in gross cotton incomes from stabilizing them would be considerable.

Certain assumptions are necessary to construct such a table. One is that the storage costs of the corporation would be as indicated earlier. A public corporation might borrow money at lower rates. Another is that the cotton carried over was all actually bought and sold at the prices indicated in Table 15, or as near to them as possible in years when the carryover on hand was insufficient to keep the price in line. Another is that an increase in carryover would have the same effect on the price of cotton as a decrease of the same amount in the size of the cotton crop. This assumption should hold good if a stabilization corporation adopted the practice of buying or selling the amount necessary to establish a particular price in December and then held the balance on hand until the following December. A fourth assumption is that the large stocks in the hands of the corporation would not tend to discourage planting the following year any more than the higher price received due to the extra carryover would tend to encourage it.

A fifth and most important assumption is that the attempt to stabilize the value of cotton crops from year to year in this way would not result in a reduction of carryover in the hands of private operators. If there was a reduction, the corporation would have heavier carrying charges; but the carrying costs to the whole industry ought to be the same whichever assumed them. Continuous operations such as here outlined, directed toward stabilizing prices, should not affect the operations of private dealers in the same way as carrying over cotton only in years of unusually large crops. Nevertheless, the corporation would have to consider the possibility of changes in the carryover in private hands. It would, in all probability, attempt to establish the desired price early in the marketing season and make purchases later only if prices sagged and the private carryover was under normal for such a crop.

In practice, the corporation would probably adopt the practice of establishing a value in years of large crops slightly below the trend value. This would reduce the carryover necessary and at the same time facilitate the disposal of the carryover within from 1 to 3 years. This would be especially necessary if there was a downward trend in total values of crops. A sharp downward break in demand or a sharp upward turn in production would test the plan severely. Gradual long-time changes could be handled easily.

The corporation would have to bear the major part of the costs and losses from the stabilization program. According to the table, an assessment of 2.3 per cent of the value of the crop would have been needed to carry the corporation from 1899 to 1913. This would have been about 0.2 cent per pound of cotton. The full carryover program for 1914 to 1927 would have required an assessment of 1.2 cents per pound of cotton. Although the losses would be due to operations in certain years, the rational procedure would be to distribute them equally over all crops. The abnormal rise in price level from 1914 to 1927 would have more than offset the normal losses in carrying if the moderate carryover program outlined in the table had been followed.

The foregoing would stabilize only gross cotton incomes. But variations in net incomes would be greatly reduced. They would range from 3 per cent below to 3 per cent above normal value for crops 20 per cent below and above normal. A system of carryovers that would more nearly stabilize net values could be devised if desired, but it would be still more costly. A similar income stabilization plan for wheat would have to be in terms of amounts of short crops to carry over and sell in years of large crops. Gross incomes would be increased instead of decreased as with cotton; and net incomes would be more nearly stabilized than for cotton. But the holding corporation would lose larger amounts.

The incomes stabilized would also be for all growers combined, not for individual growers. There would still be farmers having larger or smaller production than the average for the year, who would get larger or smaller incomes in consequence. But the variations in individual incomes would be greatly reduced.

Against the losses from stabilization of cotton incomes must be set some important advantages such as reduction of risks, more certainty of rent and interest payments, much smaller fluctuations in acreage, and lower costs of production. It is true that acreage is more responsive at present to prices than to gross and net values of crops, but it is sufficiently responsive to incomes to make them a useful medium for stabilization of acreage. It must also be recognized that with incomes of only part of the crops stabilized, there would still be shifts in acreage even of the stabilized crops. Whether these advantages are worth what they will cost is not demonstrable. The author inclines to the opinion that they are worth it.

It is hardly safe to close this chapter without calling attention to the fact that the prices which will stabilize the gross income of the various cotton crops will vary considerably from year to year depending upon the size of the crop. There have been those who have advocated stabilization by fixing a definite price for all years. If this were done, gross values of crops would fluctuate much more than at present. Growers would be robbed of the benefit of high prices when crops are poor. This will be made very evident by the following data:

Year	Cotton		Wheat		Potatoes	
	Actual Value, in Millions of Dollars	Value if Sold at Average Price, 1923–1927, in Millions of Dollars *	Actual Value, in Millions of Dollars	Value if Sold at Average Price, 1923–1927, in Millions of Dollars *	Actual Value, in Millions of Dollars	Value if Sold at Average Price, 1923–1927, in Millions of Dollars *
1923	1,572	978	736	948	325	453
1924	1,541	1,314	1,123	1,028	263	460
1925	1,464	1,553	958	804	604	352
1926	983	1,734	996	989	501	386
1927	1,254	1,233	975	1,038	388	438

* Weighted by volume of production.

Summary.—One must conclude from the foregoing that the popular and commonly advocated programs of stabilization of prices by enlarging the carryover in years of large crops cannot be justified on the usual basis of increasing prices to growers. They would to some extent stabilize incomes from some products and do the reverse for others. They would reduce the gross and net incomes of the particular crop years involved. Control of the acreages in the year following, if it could be accomplished, would make such programs somewhat more effective. But control of acreage in such years can be undertaken without a carryover program as well as with one, and the gains from it should not generally be attributed to the carryover. There is grave doubt whether enlarging the carryover would make easier a reduction of acreage the year following.

Although such must be the conclusion for the commonly advocated stabilization procedures, it is entirely possible to work out a program suited to the special nature of the supply relationship for each product which will stabilize gross and net incomes to a large extent. It will reduce net incomes of the particular crop years involved, but the advantages of more stable production and incomes may easily outweigh the slight direct losses. Once such a program was put in operation, acreage would be easier to control. Yields would also be stabilized to some extent.

There are other aspects of stabilization, such as its relation to so-called orderly marketing within the season, to commodity specialization, and to organization of producers for effective control of the marketing of their products, which need to be brought into the discussion. These are reserved for the later chapter on Stabilization Corporations.

CHAPTER VI

SEASON SURPLUSES AND GAINS FROM HOLDING DURING THE YEAR[1]

Looking back over the market prices of nearly any season, farmers can see how their incomes might have been greatly increased if they had sold their products a little sooner or a little later. Sometimes wheat, corn or oats prices rise or fall 5 to 10 cents per bushel in a single day, and hog and beef cattle prices as much as 50 cents to $1 a hundredweight. Wheat prices may be 50 to 60 cents higher or lower in the spring than in the fall; or the reverse of this. Prices of other farm products fluctuate in much the same manner. In 1920, according to Table 17, farmers sold only 42 per cent of their wheat in July, August, and September, when prices averaged 76 cents higher than during the remainder of the season. In 1917, they sold only 39 per cent of it in these months, and the price averaged 12 cents lower during the rest of the season. In the 3 years when they sold 55 per cent or over of it in these 3 months, prices rose 3 cents in one year, 13 cents another, and declined 3 cents in the last. Cotton farmers sold an average of 39 per cent of their cotton during August, September, and October in the 10 years from 1917 to 1926, the variation being from 29 to 49 per cent. The 29 per cent was in the bad year 1920 when prices averaged 13.9 cents per pound lower in the later months of the year. They were fortunate in selling 49 per cent of it in the same 3 months in 1926, for cotton prices averaged 2.3 cents lower in the later months. In 1919, they were also fortunate in that they sold only 32 per cent in the three fall months, as cotton prices averaged 3.4 cents higher in the later months. The data in the table make it clear that the growers sometimes sold freely when it would have paid them to sell slowly, and sometimes when it was good business to sell as they did. Likewise they held back in both the right and the wrong years.

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[1] The first draft of this chapter was prepared by Arthur N. Moore and Henry I. Richards.

TABLE 17.—RELATION OF SEASONAL MARKETINGS OF COTTON AND WHEAT TO WEIGHTED AVERAGE PRICE RECEIVED

Year	Wheat			Cotton		
	Per Cent Marketed July, Aug. and Sept.	Weighted Average Farm Price, Dollars per Bushel	Weighted Average Farm Price Remainder of Season, Dollars per Bushel	Per Cent Marketed August, Sept., and October	Weighted Average Farm Price, Cents per Pound	Weighted Average Farm Price Remainder of Season, Cents per Pound
1917	39.1	2.13	2.01	36.8	24.6	28.6
1918	55.5	2.05	2.08	32.3	31.0	27.8
1919	55.9	2.13	2.26	31.9	32.9	36.3
1920	42.3	2.27	1.51	29.3	25.6	11.7
1921	53.7	1.05	1.04	39.9	17.2	16.9
1922	46.3	.94	1.02	47.3	21.0	24.4
1923	47.7	.89	1.86	45.0	26.7	30.3
1924	50.9	1.13	1.43	43.7	23.1	22.7
1925	51.9	1.45	1.47	48.9	22.1	17.2
1926	55.9	1.24	1.21	39.9	13.9	11.6

Under the foregoing circumstances, it is not strange that plans for enabling growers to sell their products at more favorable times in the year have figured prominently in the discussion of agricultural reform. The simplest and commonest notion on this subject is that farmers should be helped to hold their crops over till spring each year. There is, indeed, an upward seasonal trend in prices of farm crops, as shown in the following Table 18. From 1883 to 1924, the average May price of No. 1 Northern wheat at Minneapolis was 10.4 cents above the average preceding September price. For middling cotton, the average of spot prices at New Orleans in June was 1.3 cents per pound above the average price for the preceding October. From 1891 to 1927, corn prices in May were 6.1 cents per bushel on the average above the preceding November price; and from 1909 to 1913 and 1921 to 1926, inclusive, potato prices in May were 15 cents above those of the preceding September.

These increases are scarcely enough to pay for the cost of storage, interest, and insurance at commercial rates;[2] but many farmers have sufficient storage space on their farms for their crops, and many need not consider interest on the value of their crop as a cost since they probably would not loan the money at interest during this period if they had it, and do not need it for productive purposes until the following spring and summer. Keeping their money in grain or cotton may, therefore, be a way of increasing their incomes. For those who need the money to pay debts, the economy of holding would be indeed questionable.

TABLE 18.—AVERAGE MONTHLY PRICES OF COTTON, WHEAT, CORN AND POTATOES *†

Month	Cotton 1900–1927, Cents per Pound	Wheat 1883–1924, Dollars per Bushel	Corn 1891–1926, Dollars per Bushel	Potatoes 1909–1913 1921–1926, Dollars per Bushel
September	16.0	1.04	0.72	0.97
October	16.0	1.04	0.67	0.94
November	16.3	1.03	0.65	1.01
December	16.2	1.04	0.63	1.04
January	16.4	1.07	0.62	1.11
February	16.3	1.06	0.62	1.11
March	16.4	1.06	0.64	1.10
April	16.6	1.10	0.67	1.18
May	16.7	1.14	0.71	1.12
June	17.3	1.10	0.72	
July	17.4	1.10	0.74	
August	16.8	1.10	0.76	

* Cotton.—Middling Spot Cotton at New Orleans.

Wheat.—No. 1 Northern Wheat at Minneapolis, by BOYLE, JAMES E., "Marketing of Agricultural Products," p. 219.

Corn.—No. 3 Mixed Corn at Chicago, from *Ann. Repts.* Chicago Board of Trade.

Potatoes.—Maine and New York State L. C. L. price per bushel to jobbers at New York. U. S. Dept. Agr., 1927 Yearbook, Table 213.

† These seasonal advances are higher than normal because they include a period of rising prices.

Furthermore, the failure of prices to rise enough on the average to pay storage costs does not prove that holding does not pay; but, on the contrary, suggests that income has been obtained from it in ways not apparent on the surface. If dealers have stored freely in the years when prices have risen and sparingly in other years, they may have made profits and the growers losses, even though average prices do not show it. Prices may have been lower than should be in some seasons because the growers have sold too freely; and higher than should be in others because the growers have held out for too high prices. It makes a difference who holds the cotton when its price is rising, and who holds it when its price is falling. This chapter undertakes to test out various possibilities as to selling by the growers at such times as to realize better than the average price for the year.

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[2] See Appendix, Note *B*.

UNIFORM MARKETING

The simplest method proposed for this is to sell the *same percentage* of each year's crop at the same time each year. If this plan is followed, it will reduce the speculative profits of dealers from holding larger amounts at the right time. If the growers obtain a larger average price as a result, it will be as a result of robbing the dealers of some of their gains from choosing better times to sell than do the growers. The test of this kind of a proposal must be application. It will produce gains for those who try it if it be a fact that dealers do gain as suggested. If a small group of growers had followed the practice of selling one-twelfth each month for the years 1890 to 1927, *they would have increased the average price for their cotton, over what they would have received if they had sold at the actual rate of marketing for the total crop of that year, by only 0.21 cent per pound;*[3] *their price for wheat only 2.5 cents per bushel, and their price for potatoes 2.3 cents per bushel, as shown in Table 19.* These increases in prices would not have paid the commercial costs of holding the additional amounts of product. The average yearly price that cotton growers would have received would have been more than the actual prices in 25 out of 38 years; but after estimated costs of holding for 5 months were deducted, net gains would have remained in only 9 years. A similar comparison for wheat shows that farmers actually received a higher average price in 8 out of 28 years than they could have obtained by uniform marketing under the above assumption. When holding costs at commercial rates for 6 months are deducted, net gains could have been made in only 3 years; and if only one-half these costs are deducted, in only 6 out of the 28 years. Uniform marketing of potatoes would have yielded potato farmers a higher average price in 13 out of 20 years. The average increase of 2.3 cents per bushel for the entire period, however, is much less than the cost of storage.

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[3] See Appendix Tables *C* and *D* for data. If a crop were sold one-twelfth each month, the average price received would be a simple average of the monthly average prices. If it were sold at the prevailing rate of marketing, the average price received would be the weighted average of monthly prices (weights according to marketings). Therefore the differences between the simple and the weighted averages indicate the gains and losses from selling one-twelfth the crop each month. The costs due to the longer storage period must also be included.

TABLE 19.—ESTIMATED GAINS AND LOSSES FROM UNIFORM MARKETING OF WHEAT, COTTON, AND POTATOES

Crop	Unit	Period	Simple Average Prices, Cents	Weighted Average Prices, Cents	Average Gain from Uniform Marketing, Cents	Average Cost of Holding, Cents*	Net Loss, Cents
Cotton...	Pound	1890–1927	14.20	13.99	0.21	0.59	0.38
Wheat...	Bushel	1899–1926	129.00	127.00	2.00	11.00	9.00
Potatoes..	Bushel	1909–1927	108.00	106.00	2.00		

* Average estimated cost of holding cotton for 5 months and wheat for 6 months.

The obverse of the foregoing is that if such a program had been carried out, the dealers would have gained from it, for although they would have paid a little more for their product, they would have saved more in storage costs. But, of course, they would have lost a large part of their business; and probably the principal gains the dealers make are not from their holding, but from their merchandising operations which make the holding necessary.

The foregoing analysis is in terms of what a small group of growers might accomplish by a program of selling at a uniform rate. If a large proportion of the growers of any product were to undertake such a program, the results might be different because the dealers, unable to obtain their accustomed volume of business in the fall, might bid a little higher and yield to the growers a part of their gains from their merchandising and storage operations. There is no way of proving this except by trial over a period. Such a selling program would require that the growers be rather strongly organized.

HOLDING FOR A GIVEN PROFIT EACH YEAR

Even if a program of uniform selling by a large organization did not raise prices relatively in the fall, this would not prove that there is no time of selling a crop that will return the growers more than they receive at present. Various other proposals have been advanced. One of these is to sell on the first date that the price rises a definite amount, decided upon in advance, above the price that could have been obtained in the autumn, plus the cost of holding; and if such a day does not arise, to sell upon a definite day regardless of the price on that day. Table 20 gives the data needed to determine the losses and gains from such a program for cotton. Average October prices are taken as the autumn price. Two dead-line dates are set, Mar. 1 and Aug. 1. The prices taken are the closing prices for Middling spot cotton, New Orleans and New York. The holding costs are those cited earlier in the chapter. In 25 out of the 38 years, the price was above the cost of storage before Mar. 1 or on Mar. 1. But the losses from selling on Mar. 1 in the other 13 years would have averaged 2.8 cents per pound per year and totaled 36 cents per pound for the period. Leaving out the 1914 to 1920 war years, 21 years of gains would have been counted against 10 years of losses averaging 1.9 cents per pound. But in following such a program one would never know when to unload. If one had sold in the 20 years, the moment prices rose above carrying costs, one would have accumulated no gains to offset the losses in the 11 years. If 1 cent above carrying costs had been set as the policy, there would have been 13 years, leaving out the war years, when a 1-cent gain would have been made, or a total of 13 cents, before March 1, and 13 years when an average loss of 2.1 cents would have been realized, or a total of 28 cents. If a 6-cent margin

TABLE 20.—COTTON: POSSIBLE GAINS AND LOSSES ABOVE ESTIMATED HOLDING COSTS FROM OCTOBER TO MARCH 1 AND AUGUST 1 THE FOLLOWING YEAR, 1890 TO 1927 *

(In Cents)

Year	Maximum gains above costs up to		Gains + and losses − above costs on	
	March 1	August 1	March 1	August 1
1890	....	....	− 1.7	− 3.1
1891	....	....	− 1.8	− 1.9
1892	1.83	1.83	+ 0.8	− 0.7
1893	....	....	− 1.1	− 2.3
1894	....	1.02	− 0.6	+ 0.6
1895	....	....	− 1.5	− 2.2
1896	0.10	0.10	− 1.0	− 0.8
1897	....	....	− 0.3	− 0.7
1898	1.04	1.04	+ 1.0	+ 0.2
1899	1.80	2.45	+ 1.8	+ 1.8
1900	1.62	1.62	− 1.3	− 2.8
1901	....	1.43	+ 0.6	+ 0.4
1902	1.13	4.03	+ 1.0	+ 3.2
1903	6.12	6.15	+ 5.1	− 0.5
1904	....	0.50	− 2.9	− 0.1
1905	1.80	1.80	0.0	− 0.5
1906	0.64	1.40	− 0.7	+ 1.0
1907	0.72	0.72	− 0.3	− 1.9
1908	0.28	2.99	0.0	+ 2.5
1909	2.06	2.06	+ 0.6	+ 0.1
1910	0.50	0.68	− 0.4	− 2.2
1911	0.53	2.83	+ 0.3	+ 2.6
1912	1.86	1.86	+ 1.1	+ 0.1
1913	....	....	− 1.5	− 1.8
1914	....	2.10	+ 0.4	+ 0.7
1915	....	0.30	− 1.4	+ 0.1
1916	3.02	7.62	− 1.2	+ 6.3
1917	4.58	6.48	+ 4.2	− 1.1
1918	....	0.94	− 5.2	+ 0.4
1919	4.90	4.90	+ 3.8	+ 0.7
1920	....	....	−11.1	−12.2
1921	....	2.20	− 3.0	+ 0.5
1922	7.36	8.28	+ 7.4	− 0.8
1923	6.38	6.38	+ 0.2	− 1.5
1924	1.21	1.64	+ 0.9	− 1.0
1925	....	....	− 4.2	− 3.9
1926	1.00	4.80	+ 0.9	+ 4.4
1927	0.20	0.73	− 7.4	− 4.5

* See Appendix, Tables *E* to *G*, for similar data for wheat and corn.

had been set up as signal to sell, total gains of 18 cents would have been realized in 3 years, excluding the war years, and total losses of 29 cents in 17 years. Similar tables were constructed for wheat and for corn with storage costs at the usual commercial rates and at one-half the commercial rates. Table 21 balances the total gains in the profitable years against the total losses in the losing years, for the years for which data are available, excluding the war years, for all three commodities, taking Mar. 1 and Aug. 1 as dead-lines for wheat and cotton and the average of May for corn, and holding for various amounts above costs of storage, these latter computed at commercial rates, and also at half of commercial rates in the case of wheat and corn.

The table shows that if the cotton had been held only to Mar. 1, no total gains could have been made by holding for any predetermined profit, and the total losses for the period would have ranged from 2.7 cents per pound from holding for a 6-cent profit each year to a loss of 14.5 cents for holding for only a 1-cent profit. Holding to Aug. 1, total net losses of 8.1 cents would have resulted from holding for a profit of 2 cents each year. But a small total net profit could have been made by holding cotton for a net profit of 5 or 6 cents until Aug. 1. The total gains would have been 5 cents per pound if 6 cents had been made the selling point before Aug. 1. If the war period was included, the net gains would have been slightly larger.

No profit could have been made by holding wheat each year until either Mar. 1 or Aug. 1 for any predetermined profit if holding costs at commercial rates were allowed. At one-half these rates, a net profit ranging from 2 to 19 cents would have been made by holding for a net profit of 1, 8, or anything from 55 to 75 cents per bushel until Mar. 1. The losses from holding for other amounts or from holding until Aug. 1, would have been fairly large.

The chances of gain from holding corn every year from November to May are about the same as for wheat. If only one-half of the commercial holding costs were allowed, a small total profit of 2 cents per bushel could have been made by holding for a net profit of 6 cents per bushel.

We must conclude from the foregoing that *although holding*

Table 21.—Total Unit Net Gains and Losses All Years from Holding Each Year for a Given Net Profit

A, holding costs at commercial rates. *B*, holding costs at one-half commercial rates.

Gains +; Losses −

Holding for Profit of: Cents	Wheat (1899–1913; 1921–1926) holding to				Cotton (1890–1913; 1921–1927) holding to		Corn (1892–1913; 1921–1927) holding to May	
	Mar. 1, Cents per bushel		Aug. 1, Cents per bushel		Mar. 1, Cents per pound	Aug. 1, Cents per pound	*A*, Cents per bushel	*B*, Cents per bushel
	A	*B*	*A*	*B*				
1	− 33	+13	− 74	−14	−14.5	− 6.4	−107	−46
2	− 83	− 5	−142	−24	−13.3	− 8.1	−107	−25
3	− 84	−39	−147	−35	−11.7	− 5.6	−110	−17
4	− 92	−26	−165	−31	− 8.7	− 0.6	−108	−16
5	− 88	−31	−153	−58	− 5.7	+ 2.0	−106	− 4
6	− 78	−20	−141	−44	− 2.7	+ 5.0	−104	+ 2
7	− 71	− 9	−129	−30	− 8.4	− 8.0	−118	− 2
8	− 92	+ 2	−156	−36	− 8.0	− 7.0	−118	−10
9	− 92	− 9	−161	−23	− 8.0	−15.8	−118	− 9
10	− 83	−12	−152	−29	....	....	−118	− 8
15	− 94	− 7	−166	−19	....	....	−118	− 1
20	− 98	−10	−184	−36				
25	−120	0	−220	−16				
30	−115	−21	−215	−41				
35	−110	−16	−210	−36				
40	−105	−11	−205	−31				
45	−100	− 6	−200	−26				
50	− 95	− 1	−195	−21				
55	− 90	+ 4	−190	−16				
60	− 85	+ 9	−185	−11				
65	− 97	+14	−180	− 6				
70	− 97	+19	−242	− 1				
75	− 97	+ 3	−242	−56				

for certain amounts of profit and up to certain dates could have yielded small profits for some commodities over a period of years, any farmer or farmers' organization that undertook such a program would have stood much more chance of losing than of gaining from it. Holding for small profits would have yielded losses in nearly all cases; and holding for large profits would have meant long years when only losses were realized. It would have been a stroke of fortune if they had chosen the right amounts and dates. One cannot forecast for the future with any safety on the basis of this past period. There might easily be only 2 instead of 3 years in the next 38 years when prices of cotton would rise enough to yield a 6-cent profit. The large profits, which are the ones that yield about the only gains there are, are highly accidental. This must not be taken to mean that individual farmers or dealers can not make a profit by holding every year for a given profit; but if so, their carrying costs must be lower than those used here, or they must buy at prices below the average in September, October or November for wheat and cotton or cotton respectively. *At the best, the gains from following such a marketing policy would be small.*

This analysis again does not take account of the effect on the seasonal course of market prices of the above holding program. If a large group of growers, or a large cooperative organization, were to hold for a given price, no doubt, in many cases, this price would presently come to prevail; but it would quickly vanish if brisk selling ensued. If the selling was held in check, then heavy selling in later months might in many years depress prices more than enough to make up for the temporarily higher prices, or a larger carryover might result. Nothing would be gained by the growers from the manipulation of prices by such holding for a given price unless it had the effect of causing the consumers to take the total crop at a higher average figure, or kept the dealers from making profits in certain situations.

SELECTING THE PROFITABLE HOLDING YEARS

Apparently, if farmers or others are to gain very much from holding such crops as cotton, wheat, or corn from harvest time until later in the season, some method of selecting the profitable holding years must be found. A number of simple procedures for this have been suggested by various people, which are here tested out. The first procedure considered is holding when prices at harvest times are above those during the preceding harvest. This is discussed in an article by P. K. Whelpton in the *Journal of Farm Economics.*[4] Mr. Whelpton thinks this program will work successfully because of the human tendency to judge the future by the present. When the price is higher than usual, buyers and sellers think it will rise higher yet, and the price is bid up. When the price is low, producers and dealers are anxious to get rid of their cotton before the price falls still lower, and the price is therefore depressed. In the test made of the plan, the years selected for holding were when cotton prices in October, wheat prices in September, and corn prices in November were above similar prices in the same month of the preceding year by 0.5 cent per pound for cotton, and 5 cents per bushel for corn and wheat. March 1, May, and August 1, were again chosen as times to sell. The net profit that could have been made by following such a holding policy, and holding for various profits as explained above, during the past 20 to 30 years, omitting the war period, 1914 to 1920, are shown in Table 22. *No gains could apparently have been made holding for any net profit if regular commercial holding costs are charged.* If only one-half these costs are charged for wheat, a total gain of 1 to 26 cents could have been made by holding for a profit of 1, 25 or 45 to 70 cents per bushel up to Mar. 1. On the same basis, total gains of 1 to 21 cents could have been made by holding until Aug. 1, if need be, for a 1-cent or 50- to 70-cent profit each year. The total losses from holding wheat for other amounts range from 4 to 37 cents when holding to Aug. 1, and from 4 to 33 cents when holding to Mar. 1. The total losses from holding cotton range from 6.5 to 27.3 cents per pound. If the war period, 1914 to 1920, were included, the losses would have been considerably reduced. For corn, farmers and others whose costs of holding might be only one-half the regular commercial rates could have made a total gain of 5 to 15 cents per bushel by holding until May for a net profit of 3 to 15 cents per bushel.

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[4] *Jour. Farm Econ.,* Volume VII, pages 445–450.

TABLE 22.—NET GAINS AND LOSSES FROM HOLDING FOR VARIOUS NET PROFITS UNTIL MARCH 1, MAY, AND AUGUST 1 IN YEARS WHEN PRICES AT HARVEST TIME ARE ABOVE THE PRECEDING YEAR

A, holding costs at commercial rates; *B*, holding costs at one-half commercial rates.

Gains, +; Losses, –

Holding for Profit of: Cents	Wheat (1899–1913; 1921–1926) holding to				Cotton (1890–1913; 1921–1927) Holding to		Corn (1892–1913; 1921–1927) Holding to May	
	Mar. 1, Cents per Bushel		Aug. 1, Cents per Bushel		Mar. 1, Cents per Pound	Aug. 1, Cents per Pound	*A*, Cents per Bushel	*B*, Cents per Bushel
	A	*B*	*A*	*B*				
1	–26	+ 8	–38	+ 8	–25.2	–17.6	–38	–11
2	–59	–10	–86	–14	–24.0	–18.3	–29	– 1
3	–55	–17	–82	–26	–22.4	–17.1	–32	+ 5
4	–51	–33	–78	–20	–19.4	–12.1	–30	+ 5
5	–47	–29	–74	–37	–16.4	– 9.5	–28	+14
6	–43	–25	–70	–32	–13.4	– 6.5	–26	+16
7	–39	–21	–66	–27	–19.1	–19.5	–40	+18
8	–35	–17	–62	–22	–18.7	–18.5	....	+ 6
9	–31	–13	–58	–17	....	–27.3	....	+ 7
10	–27	– 9	–54	–12	....	....	....	+ 8
15	–40	– 8	–70	–17	....	....	....	+15
20	–30	– 4	–60	–10				
25	–52	+ 6	–75	0				
30	–47	–14	–70	–19				
35	–42	– 9	–65	–14				
40	–37	– 4	–60	– 9				
45	–32	+ 1	–55	– 4				
50	–27	+ 6	–50	+ 1				
55	–22	+11	–45	+ 6				
60	–17	+16	–40	+11				
65	....	+21	–34	+16				
70	....	+26	....	+21				

The conclusion must be that the rule of holding when prices are above those of the preceding harvest will not serve as a guide. Following it, one's chances of losses exceed one's chances of gains.

Another rule for wheat suggested by Profs. Warren and Pearson, is to hold in years when wheat prices in terms of 1910 to 1914 dollars are low relative to average prices of wheat from 1910 to 1914. These men found that when the prices of No. 1 Northern wheat f.o.b. afloat in New York city in September had been under wheat prices from 1910 to 1914, by more than 10 per cent, the advance in May over September had averaged 8.1 cents per bushel; and when above by 10 per cent or less, the advance by May had averaged only 6.1 cents. When wheat prices in September were above the 1910 to 1914 level by less than 10 per cent, the advance from September to May had averaged 3.4 cents; and when under by 10 or more, prices the following May had averaged 3.3 cents per bushel less, if 1897, the year of the Leiter corner in wheat, is omitted. They explain these results as follows:

> Apparently when wheat has a high purchasing power there is a very great risk of loss by holding, and apparently when wheat has a low purchasing power there is a good chance of profiting from holding.
>
> When wheat is high it is usually due to low yields per acre. It is always being harvested somewhere in the world. It is not probable that low yields will continue for a full year, and even more improbable that the crops for the next year will also be poor. High prices also tend to increase the effort in production so that high prices are more likely to be followed by low prices than by continued high prices. Conversely, low prices are usually due to excessive crops which are not likely to continue. The most probable future price of wheat is a price nearer to the normal purchasing power than are present prices.

When this rule is applied to No. 1 Northern spring wheat at Minneapolis from 1899 to 1913 and 1921 to 1926, 9 years fall into the first group, 5 in the second, 3 in the third, and 4 in the fourth. If wheat had been held during the first group of years to Mar. 1 for a certain profit each year, under the above assumptions, no profits could have been realized if regular holding costs are allowed. If only one-half the regular holding costs are allowed, profits ranging from 0.5 cent to 65 cents per bushel could have been obtained by holding for 1 cent per bushel profit each year, or for any profit between 5 and 70 cents per bushel each year. Losses, however, would have resulted from holding for a net profit of 2, 3 or 4 cents per bushel each year. If wheat had been held during the remaining 12 years, losses of 12 to 46 cents would have resulted from holding for 3 or more cents net profit each year, when one-half commercial holding costs are allowed. We must conclude from these results that this rule would have been proved more satisfactory than holding every year under the above assumptions; but that it would not be a safe guide for the future.

Another and more logical procedure for determining when to hold is to relate it to the total annual supply, production plus carryover. L. H. Bean has stated for cotton that:

> In years of large crops, prices usually decline during the first half of the season below the yearly average, and then turn upward on the expectation that the next crop will be smaller, and if such are the indications during February and March, they continue to rise till the end of the season; but if in the spring the prospects are for another large crop, prices turn downward for the remainder of the season. In the case of years of small crops, prices start below the yearly average during the first few months of the season and reach a peak in December and January with a decline thereafter if the prospects are for a larger crop the next year, but continue to advance if prospects are for another small crop.[5]

B. B. Smith discusses the circumstance as follows:

> As the season develops in a large crop year the market becomes cognizant of the large crop through the medium of crop reports issued both by private concerns and by the government. ''Potential'' supply becomes larger. Price should become lower. Somewhat later, when the crop begins to pass through the gins in quantity, the expectation of a large crop is verified, and the actual supply becomes larger, thus tending to support and augment the influence of the large potential supply in causing prices to decline.[6]

This reasoning is supported for cotton by the fact that the official forecasts of production available to the public in October are, as a rule, underestimated for large crops as compared with the crop estimates issued in December, whereas for small crops they are overestimated. This helps to explain the usual fall in price from October to December in large-crop years and the usual rise in price in small-crop years.

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[5] ''Some Interrelationships between the Supply, Price and Consumption of Cotton.'' Address delivered before the American Statistical Association, New York City, April 20, 1928.

[6] ''Factors Affecting the Price of Cotton,'' U. S. Dept. Agri., *Tech. Bull.* 50, p. 10.

The analysis whose results are presented in Tables 23 and 24 shows that if the years when production was below normal from 1890 to 1913 and 1921 to 1927 had been selected for cotton, *total gains could have been made by holding until Mar. 1 for a profit of from 2 to 8 cents above holding costs, and by holding until Aug. 1 for a profit of from 1 to 8 cents;* and a maximum gain of 24.5 cents could have been made by holding until Aug. 1 for a 6-cent profit each year. Holding until Aug. 1 for a 4 or 5-cent profit each year would have resulted in total gains of 17.8 and 19.5 cents per pound for the 11 years when production was below normal. These profits are a decided contrast to the losses of 8.9 to 20.2 cents per pound that would have been incurred by holding in years when production was above normal shown in the earlier table. We may conclude, therefore, that *the possibilities of making gains from holding cotton are much greater in years when cotton production is below normal than when it is above normal.*

The same procedure applied to wheat from 1899 to 1913 and 1921 to 1926 would have resulted in large losses. When the commercial costs of holding are charged, total losses of from $0.37 to $1.22 per bushel would have resulted from holding until Mar. 1 for a profit each year of anything between 1 to 40 cents, and total losses of from $0.83 to $1.85 per bushel by holding till Aug. 1. If only one-half the commercial holding costs were allowed, the losses would have been smaller and a total gain of 4 cents would have been obtained by holding for a 1-cent profit each year.

Holding wheat in years when production in the United States is above normal, on the other hand, *would have been a profitable practice.* The chances of loss would have been small and the possibilities of profit fairly large. The maximum total gain of $0.37 per bushel above commercial holding costs would have been made by holding until Mar. 1 for a profit of 60 cents. Holding for 3 or 7 cents, however, would have yielded total

TABLE 23.—TOTAL NET GAINS AND LOSSES FROM HOLDING COTTON, WHEAT, AND CORN FOR VARIOUS PROFITS UNTIL MARCH 1, MAY, AND AUGUST 1, IN YEARS WHEN PRODUCTION WAS ABOVE NORMAL

A, holding costs at commercial rates; *B*, holding costs at one-half commercial rates.

Gains, +; Losses, –

Holding for Profit of: Cents	Wheat (1899–1913; 1921–1926) Holding to				Cotton (1890–1913; 1921–1927) Holding to		Corn (1892–1913; 1921–1927) Holding to May	
	Mar. 1, Cents per Bushel		Aug. 1, Cents per Bushel		Mar. 1, Cents per Pound	Aug. 1, Cents per Pound	*A*, Cents per Bushel	*B*, Cents per Bushel
	A	*B*	*A*	*B*				
1	+ 4	+ 9	+ 9	+ 9	–11.6	– 8.9	–84	–43
2	+12	+18	+ 7	+18	–17.2	–17.5	–82	–32
3	+20	+27	+15	+27	–20.2	–17.4	–81	–27
4	+ 8	+36	– 8	+36	–18.0	–18.4	–80	–22
5	+ 8	+26	– 1	+26	–18.0	–17.5	–79	–19
6	+14	+33	+ 6	+34	–18.0	–19.5	–78	–18
7	+20	+40	+13	+42	–18.0	–13.4	–74	–15
8	– 4	+47	–19	+30	–18.0	–12.7	....	–14
9	– 6	+32	–15	+37	....	–18.9	....	– 9
10	– 4	+28	– 9	+24	....	....	....	– 8
15	+ 6	+36	– 8	+49	....	....	....	– 1
20	– 3	+34	–35	+25				
25	+ 2	+39	–35	+35				
30	+ 7	+44	–30	+37				
35	+12	+49	–25	+42				
40	+17	+54	–20	+47				
45	+22	+59	–15	+52				
50	+27	+64	–10	+57				
55	+32	+69	– 5	+62				
60	+37	+74	0	+67				
65	+25	+79	+ 5	+72				
70	+25	+84	–57	+77				
75	+25	+68	–57	+22				

Table 24.—Total Net Gains and Losses from Holding Cotton, Wheat and Corn for Various Profits until March 1, May, and August 1, in Years When Production Was below Normal

A, holding costs at commercial rates; *B*, holding costs at one-half commercial rates.

Gains, +; Losses, −

Holding for Profit of: Cents	Wheat (1899–1913; 1921–1926) Holding to				Cotton (1890–1913; 1921–1927) Holding to		Corn (1892–1913; 1921–1927) Holding to May	
	Mar. 1, Cents per Bushel		Aug. 1, Cents per Bushel		Mar. 1, Cents per Pound	Aug. 1, Cents per Pound	*A*, Cents per Bushel	*B*, Cents per Bushel
	A	*B*	*A*	*B*				
1	− 37	+ 4	− 83	−23	− 2.9	+ 2.5	−23	− 3
2	− 95	−23	−149	−42	+ 3.9	+ 9.4	−25	+ 7
3	−104	−66	−162	−62	+ 8.5	+11.8	−29	+10
4	−100	−62	−157	−67	+ 9.3	+17.8	−28	+ 8
5	− 96	−57	−152	−84	+12.3	+19.5	−27	+15
6	− 92	−53	−147	−78	+15.3	+24.5	−26	+16
7	− 91	−49	−142	−72	+ 9.6	+ 5.4	−44	+17
8	− 88	−45	−137	−66	+10.0	+ 5.7	....	+ 4
9	− 86	−41	−146	−60	....	− 3.1		
10	− 82	−40	−143	−53				
15	−100	−43	−158	−68				
20	− 95	−44	−149	−61				
25	−122	−39	−185	−51				
30	−122	−65	−185	−78				
35	−122	−65	−185	−78				
40	−122	−65	−185	−78				
45	−122	−65	−185	−78				
50	−122	−65	−185	−78				
55	−122	−65	−185	−78				
60	−122	−65	−185	−78				
65	−122	−65	−185	−78				
70	−122	−65	−185	−78				
75	−122	−65	−185	−78				

gains of 20 cents per bushel, or an average of 2 cents per bushel per year. If only one-half of the commercial holding costs were allowed, maximum gains would equal $0.84 per bushel, or an average of more than 9 cents per bushel per year. The smallest total gains in holding for any given profit every year to Mar. 1 or Aug. 1, would have been 9 cents per bushel, or an average of 1 cent per bushel per year. These results indicate that the chances of profit from holding wheat are much greater in years when production is above normal than when it is below. They are also much greater apparently when wheat prices in September are above the preceding September or below the average from 1910 to 1914 in terms of 1910 to 1914 dollars.

Suppose a large organization were to adopt the policy of holding wheat in years when the crop was above normal, or cotton in years when the crop was below normal, how would the course of prices have been changed? and how would this have affected the gains and losses? If the holding were wisely done, and not overdone, the effect would clearly be to bring prices closer in these years to the normal seasonal course, increase the returns to the growers, and reduce the profits of the dealers. The gains to the growers as a whole would not be as great as those figured for the small group. To offset these gains would be the losses that would result whenever the holding was overdone.

Closer analysis of farm-commodity prices has furnished an even better basis than the foregoing for selecting the years in which to hold. The farm products whose price movements have been analyzed most successfully are potatoes, cotton, corn, hogs and oats; and some headway has been made with wheat, butter, eggs, and beef cattle. Such studies are continuing and the needed data and records are constantly improving. The analysis indicate with fair accuracy how changes in supply, changes in demand and other factors have been related to prices over a certain period in the past for which the data are available. For example, in the period from 1902 to 1924, potato prices in the Minneapolis market increased 57 per cent of normal when supply decreased from 120 per cent of normal to 90 per cent, according to Dr. Holbrook Working's analysis.[7]

[7] "Factors Affecting the Price of Minnesota Potatoes," *Minn. Tech. Bull.* 29.

If a considerable group of individual farmers, or a cooperative organization handling a small fraction of the crop, had had this information ever since 1902, and had sold on the basis of it each year, they would have lost in some years and gained in others. In the fall of 1919, they would have said that the price of potatoes was due to rise and would have held until it did. In 1921, they would have said that the price of potatoes was due to fall and would have sold as many as possible before the price sank to this level. But using this information as a guide they would have held for a rise in the fall of 1922 and would have lost in consequence; and in 1923, they would have sold too freely.

In the 21 years, the actual prices in October were higher than those estimated as right in 13 years.[8] If the growers had followed the policy of selling more freely in the autumn, the extent of this selling depending upon the amount of discrepancy in the prices, until the actual prices came down to the estimated level, they would have gained a little, and in some years considerable, in nearly all of these 13 years. If in the remaining 8 years, they had held until actual prices reached the estimated level in the fall and early winter months, they would have lost rather heavily in 3 years. They would have gained a little in 3 years, and considerable in 2 years. In several of the 13 years first mentioned, although selling more freely in October would have paid, it was only a short time before the actual price fell below the estimated price. Holding for a higher price in such situations would usually have resulted in a loss.

Table 25 contrasts the actual with the estimated or "forecasted" price during this period. In 2 years the discrepancy was very large; but prices were very high in these years. The curve of supply price relationships for very small potato crops, such as those of 1916, 1919, and 1925, is much more uncertain than for more nearly normal crops. The curve at the top and bottom is based upon so few observations that its shape is largely guesswork. Forecasts for all other years came within 20 cents per hundredweight of the actual price.

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[8] The estimated monthly price used is the average price estimated from Dr. Working's formula adjusted for average changes in prices from month to month over this entire period. Costs of holding are therefore assumed to equal these average changes in prices from month to month.

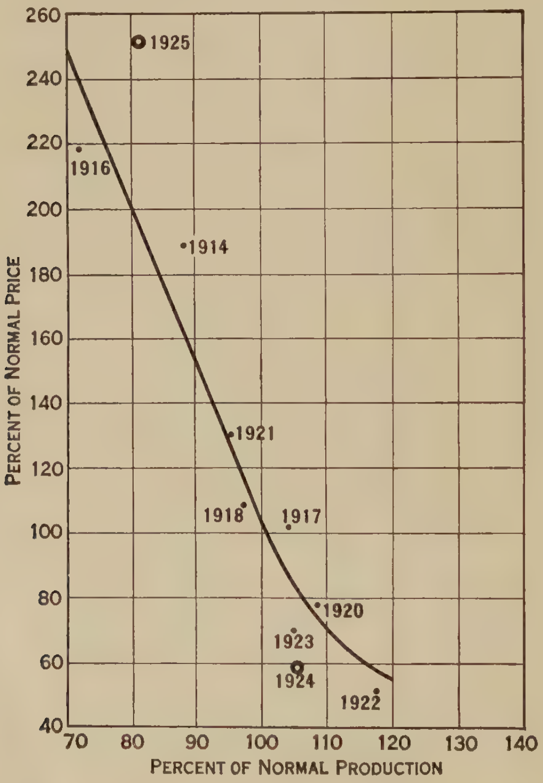
TABLE 25.—COMPARISON OF ACTUAL AND ESTIMATED PRICES OF POTATOES IN ST. PAUL AND MINNEAPOLIS, 1902–1923 *

Year	Actual price per hundredweight	Estimated price per hundredweight	Difference between actual and estimated price, cents per hundredweight
1902	$0.57	$0.59	+ 2
1903	1.10	0.91	−19
1904	0.49	0.49	0
1905	0.77	0.97	+20
1906	0.70	0.69	− 1
1907	0.90	0.89	− 1
1908	1.17	1.26	+ 9
1909	0.58	0.64	+ 6
1910	0.90	0.86	− 4
1911	1.39	1.34	− 5
1912	0.66	0.61	− 5
1913	1.03	1.03	0
1914	0.68	0.63	− 5
1915	1.03	0.92	−11
1916	2.82	3.48	+66
1917	1.63	1.46	−17
1918	1.76	1.89	+13
1919	3.64	2.86	−78
1920	1.13	1.21	+ 8
1921	1.56	1.56	0
1922	0.75	0.82	+ 7
1923	......	1.20	

* Univ. Minn., *Bull.* 211, Table III, p. 55.

Grant that this information as to relationships to price would have saved a growers' organization considerable if it had been available for each year since 1902; but it was not available until 1923—until after all these years had passed and the crops were all sold. It is a summary of past relations. The using of this information as the basis for a future selling program is an altogether different problem. The relationships to price may have changed. Those given by Dr. Working's "formula," being the average of the whole period from 1902 to 1923, were out of date about 14 years by 1923. Later analysis by L. H. Bean and others, as presented in Chapter IV, has indicated that the relationships have been pronouncedly different for the last 10 years than for the first 10 years, that supply now affects price much more than in the earlier period. Moreover, the relationship seems to be still changing. This means that any judgments made on the basis of relationships even in the past 10 years will not be very well founded.

Chart 21.—Relation of Supply of Potatoes to Prices, 1914–1925



Why not take the last 2 or 3 years, or the last 5 years, some one will ask. The answer is that it is only by comparing differences in supply, demand, price, and other factors in many different years that any statements can be made as to their relationships. In Chart 21 are located the prices and supplies of the last eight potato crops in the series in Minnesota. The line which is drawn represents an attempt to judge where it would come if one had fifty dots instead of the eight. No two persons would draw it in exactly the same place. If a dot for the 1924 crop were added, it would be far below and to the left of the curve as drawn. Including the year 1924, one would draw a slightly different line from the one in the chart. If a dot for the 1925 crop were added, it would be far above and to the right of the normal curve; and the curve would need to be altered still otherwise. Perhaps in 50 years, if the relationships had not changed in the meantime, one would be satisfied with the location and shape of the curve. But surely relationships would change in such a period, making constant readjustments necessary. And for few of the changes would enough years have passed to furnish a sure basis for shaping the curve. Consequently, any statement of relationships of supply and other factors to price of commodity is likely to be both somewhat out of date, and to be based on too few years of experience. The less out of date it is, the less well founded it is otherwise.

Studies of the foregoing sorts have not been made to any extent till recently, and consequently we cannot give any conclusive evidence as to how successful selling on the basis of such analysis is going to be. Following is the summary of the experience of the last 3 years with cotton price analysis by the Bureau of Agricultural Economics. The marketings for 1926 followed about the normal course. Prices in August and September were relatively high. In October, November, and December they fell. Toward the end of the season, prices again rose and ended nearly where they began the season. Knowing the probable trend of prices for the crop, producers should have sold all they could in August and September and stopped when prices fell below the estimated price of cotton for the season. Holding until after prices reached this level of prices would have stabilized the marketing and added millions of dollars to the pockets of the producers of cotton.

By taking into consideration the area that was planted in 1927 and the prospects for the new crop, the marketing of the 1927 crop could have been planned so as to increase income. The 1926 to 1927 season closed with a boom in the cotton market.

This boom had been stimulated by heavy consumption of cheap cotton and the rise in prices from the low point of the season toward the end of the year. The high prices reached at the end of this season and the beginning of the 1927 to 1928 season offered farmers an opportunity to sell their new crop early. The price in September was considerably higher than the probable average for the year. Knowing this, farmers should have attempted to sell all of their crop at these prices.

The 1928 crop was larger than that of 1927; but the carry-over had been reduced so much that the total supply of American cotton for the season was less than in 1927. The price in August and September, however, moved directly opposite to that of last year. From September through November, prices have risen. Had farmers refused to sell early in the season until prices reached their present level, they would have gained from $30,000,000 to $40,000,000 by such a policy.

Summarizing the experience of the Bureau of Agricultural Economics in 1926 and 1927, and the 1928 seasons to date, one can say that *many producers would have greatly increased their income by planning the production of their crops on the basis of the announced probable effects of their plantings upon the prices likely to be received for the product, and by planning the marketing of their crops on the basis of the estimates of the probable course of prices in the marketing season.*

The American Cotton Growers' Exchange has a competent research department which has been analyzing the cotton price situation for the past two years. The following is quoted from a report on the activities of one of the state associations:

> A good example of the practical value of this price forecasting service is the result secured in marketing the Annual Pool cotton of the Association last year. The price forecast given out by the American Cotton Growers' Exchange was 22.87 cents per pound basis ⅞-inch Middling for the last of June. The South Carolina Association actually sold its cotton at 22.32 cents and netted for its members 20.50 cents. This was 2 cents above the gross price secured by non-members.

The Canadian Wheat Growers' Association also has a well-manned research department which has analyzed the market during the past few years.

Mere counts of the number of years or months in which "forecasts" have been in the right general direction cannot be taken as proof in themselves as to the success of the analysis. If one were to make a pure guess as to the *direction* in which prices were going to change, and guess enough times, one would be right just 50 per cent of the time. It is sometimes said that any better count than 50 in 100 on price forecasting is therefore proof of the success of the forecasting. This is no doubt a correct statement. But it does not prove the success of forecasts based on statistical analysis of prices. The question is, "How much better is the count with and without such analysis?" Surely the men in the trade, watching the market from day to day, are right more than half of the time as to the direction prices will take. They might easily prove to have been right, by actual count of years or months, as high as 80 or 90 per cent of the times. The mere fact that there is always a strong tendency for a seasonal advance in price assures considerably more than 50 per cent of right guesses as far as the mere direction of price movement is concerned. Our problem is, however, how often have the growers or their representatives been right? One could easily believe that they have not been right as often as the professionals in the market. But they surely have been right much more than half of the time so far as mere direction of movement is concerned. The difference between their "batting average," if it could be known, and that of the price analysts, is the measure of success of the work of the analysts; and of the probable gains that can be made if growers selected in this way the years in which to hold. Not much real evidence is available as to what this difference would be.

But there is little reason to doubt that such analysis is extremely valuable as an aid to the usual methods of observation of the market, just as the government weather forecasts are an aid to farmers in anticipating tomorrow's weather. Their principal help is in enabling them to see what is coming farther in advance, and in estimating the severity of the change which is on the way.

Furthermore, we must not forget that the grower is in by no means as good a position to judge probable price movements as to forecast probable weather movements. He is more removed from the scenes where the facts and signs which indicate price change first appear. Supplying growers and their marketing organizations with timely information service as to prices and related factors must be looked upon as one of the major service functions of public agencies. Not only is it desirable that the facts be furnished; but they should be explained and interpreted so that their significance will be felt. Ways of stating the results of such analysis must be found which will cause growers to heed them; but which will not lead them to too hasty or ill-considered action.

Just at present, there is danger that cooperative marketing organizations will place too much reliance upon the results of statistical analysis of prices. They will have to learn in time that such analysis at its best sometimes points to wrong conclusions—because new and unforeseeable situations are always developing in the economic world. The records now available are too meager and general to provide measures of relationship that can take the place of close observation of market phenomenon. Together, statistical analysis and careful observation, can help greatly. Alone, the statistical analysis is the less trustworthy.

PART III

PRICE RAISING BY GOVERNMENT ACTION

In this section will be considered the various proposals for helping agriculture by having the government intervene to raise the prices of farm products. The most obvious of these proposals is to increase the tariff duties on farm products, and this will be considered first. The others mostly take their departure from the tariff. They are designed to ''make the tariff effective'' on products of which we have an export surplus. Brief consideration will be given to a few of the export monopoly plans employed by foreign countries.

Raising prices of farm products is the most obvious line of attack upon the present agricultural situation. To bring agriculture up to the level now held by industry and trade—including scale of living and capitalization of productive assets—would require that the ratio of prices received by farmers to prices paid by them be raised probably to 105 in contrast with 89 now, and 75 in 1921. It would be easy to think that a ratio of 110 would be needed rather than 105. Many will say so.

It has commonly been said that raising prices of farm products to such a level is clearly impossible, that the moment that prices rise a few points, production increases and bring them down again. Much has been said in earlier chapters that points to such a conclusion. If prices of farm products were to rise suddenly, no doubt production would expand considerably. But if the price increase were to come gradually, its effects would be so confused with the fluctuations due to good and bad crops that farm people would not know that it had happened, and most of the higher prices would be absorbed in better living and larger payments on mortgages and, presently, in rising land values. Whatever the exponents of the various price-raising plans may argue, it is highly improbable that any of them in practice would produce a large increase in the price level of farm products in a year or two.

It is indeed appropriate that the various other price-raising plans should take the tariff as their point of departure. The contention of the McNary-Haugen proponents that the time has come when the government subsidies must be extended to products exported, not restricted to those of which a nation has a domestic deficit, can be heard stated in various forms all over the world. Producers of export products everywhere are demanding that they be brought within the charmed circle. Consumers of these products object; but if they submit to taxes to pay import duties, they cannot logically revolt against similar impositions to help export products. Many economists object, saying that it represents merely a further extension of mercantilism and interference with comparative advantage.

The fundamental difference between these plans and the protective system is that these would mostly encourage a larger production of the right products than is economical—those in which we have demonstrated our comparative advantage; whereas the protective system promotes too large a production of the wrong products—those in which we are at comparative disadvantage. No argument is needed to convince economists that the former is the less uneconomical of the two. An even stronger statement than this probably comes nearer to the truth. The products which these plans would promote have demonstrated more than comparative advantage—they have, in addition, held their own against tariff-subsidized competing products. All of them are less expanded now than they would be under a true economy distribution of production. The export bounties may restore them to that relative importance which true national economy would dictate.

Even if government interference with production and trade is undesirable, the proper place to check it is not at the point where part of the producers have found a way of making it work successfully to their advantage. Let the system rest there for a while and it will presently become a fixed institution. It seems nearly fixed already. No doubt the ideal procedure would be gradually to reduce the amount and scope of governmental interference. But the nation has become so committed to the other policy that, for the present, the way of progress seems rather to extend the subsidies to the rest of the products as fast as plans can be worked out for doing it. Or, even if it is not, the nation, and in fact, the whole world seems bent upon it; and the economist is missing an opportunity for service if he does not take a hand in shaping these plans so that they will do as little harm as possible.

The phrase "making the tariff effective" as used in connection with these price-raising plans must be understood in a rather special sense. The objective of these plans in the first instance is to raise the price of the commodities to which they are applied by all or a part of the tariff duty, in the case of the equalization-fee plans, by the duty less the fee (to the producers); in the case of the export-debenture plan, by the amount of the debenture, which may be as much as the tariff duty; etc. The objective of a protective tariff on some commodities is in the first instance likewise is to raise the price of the product by the full amount of the duty; *e.g.*, sugar, woolen goods, aluminum ware. On other commodities, however, the objective is more properly stated as preventing the annoyance of a limited amount of foreign competition in the domestic market, in which case the tariff may be said to be "effective" although raising the price very little. Thus, an effective duty may in many cases be something different from what the exponents of the price-raising plans mean by it.

The more remote end of tariffs on manufactured products is in theory the establishing of manufacturing industries that are thereafter able to stand on their own feet. Remotely speaking, then, tariffs on manufacturing are effective when they have done this. Similarly, the remote end of the various price-raising plans is to establish a relatively more important agriculture in the United States. If these plans will enable the tariff duties provided for farm products to develop such an agriculture, then one can say that the agricultural tariffs have been made effective. Thus in the remote sense, effective duties are the same in the two cases. But talking about the remote ends of tariff duties is highly academic behavior. Those who make the tariff duties are not academicians.

A form of attack commonly employed by opponents is to call these plans "economically unsound." The answer is that economic soundness may be taken either to assume certain ends as given, in which case the issue is whether the measure in question will attain these ends; or it may go clear back to the question of the value of the ends. The end set up by these plans is to increase the purchasing power of farm income. If these measures will accomplish this, then, on such a basis, they are economically sound. Opponents of the plans have usually conceded by their arguments that they will attain such an end. Economists may find what seem like adequate reasons to the contrary for any one of the plans.

If economic soundness implies the value of the ends, then reasons enough in terms of broad national policy have already been found for asking the cities to subsidize the country a little for a few decades. If it has been good policy to subsidize industrial developments for so long, why is it not good policy to subsidize agriculture for a change, in view of its recent history and present status?

Self-respecting economists may, as economists, hesitate to take the position that the particular measure is of minor consequence, that what is here involved is the issue of the farm group against the industrial group, and that national welfare at present is more concerned with promoting agriculture than with promoting industry. But as citizens they may so reason and, therefore, vote with the proponents of the measure rather than against them. A sufficient answer as a citizen, however, is that any plan may work so badly as to discredit the whole farmers' movement for a generation.

The charge of bureaucracy that has been leveled against these plans must not be taken too seriously. The export debenture plan invades no spheres of private enterprise not now invaded by the tariff system. Governments are regularly invading private affairs for the sake of raising funds to support public activities. A plan which involves no more extreme invasion than this can hardly be condemned, if the object is worthy of the effort required. Suppose one group of producers can be aided by a plan which involves little machinery; and another only by a plan requiring rather elaborate machinery; should the policy of the nation be to aid the first and not the second? Surely not. Instead, it must decide to aid neither, or else develop the necessary machinery for the second; that is, unless there are important reasons of national welfare which make aid to the first a matter of great national concern. At present in the United States, the national concern is more largely with the latter.

The issue of constitutionality has been raised with respect to most of these plans. Let us make one general statement about this and have done with it. All students of public affairs agree that it is better policy to have the United States government rather than the Attorney General's office declare measures unconstitutional. It is appropriate for Congress to solicit the opinion of the Attorney General's office on an issue of this kind. It is a mistake for Congress to pass an act which nearly all its members consider unconstitutional. If the measure is important to the welfare of the nation, and there is any reasonable chance that it will not be found unconstitutional by the Supreme Court, then Congress owes it to the nation to pass it and let the court decide. The President is under the same obligation. Anything else means that a strong majority opinion will occasionally be denied because of the negative opinion of a politically appointed cabinet officer and his legal assistants. It will mean, in effect, that the Supreme Court will have a chance to review only those measures which the Attorney General's office considers constitutional.

There seems to be an honest difference of opinion among legal specialists as to the probable action of the Supreme Court with respect to the various price-raising plans. Granted no specific prohibitions in the way, a reasonable assumption is that the court will consider proposals of this kind realistically, that is, in terms of analogies with the protective tariff system. The specific prohibitions that have been named are surely capable of being defined by a liberal court in such a way as to permit much of what these various plans propose. It may be highly worth while to discover what the present Supreme Court would permit along these lines, and the only way to find out is to pass an act and let them review it.

CHAPTER VII

TARIFF REVISION

The method of raising prices of farm products and purchasing power of farm income which has received most notice within the last 6 months is by revising the tariff schedule. But tariff revision is not really a new program for farm relief. Our survey of farm relief activity in Part I shows that tariff revision was the first move of the new administration when the Republican party resumed control of the government in 1921. Even within the last few months, the President has raised the tariff duty on onions and peanuts, and flaxseed, milk and cream are on the docket for similar treatment if Congress does not act first. President Coolidge's Agricultural Conference in the winter of 1924 and 1925 made higher tariff duties on farm products one of its major recommendations. Secretary Jardine has repeatedly urged the same thing. There have been two ideas involved in it: one to raise prices of farm products by it and thus relieve the agricultural depression directly, and the other to reduce agricultural imports and exports, thus making the country more self-sufficient agriculturally with smaller and smaller exportable surpluses. Oftentimes the latter argument has been stated in terms of protecting the home market for farm products and thus protecting the scale of living of farm families. The home-market idea has also been extended to include higher tariffs on manufactured products so as to protect the home mills that buy the farmer's cotton, wheat, flaxseed, etc., and also the wages of workingmen and, hence, the home market for the farmer's food products.

The report of the Business Men's Commission also gave attention to the tariff system of the United States, but concluded that raising duties on farm products would help very little, and that lowering the duties on manufactured products, gradually and circumspectly so as not to disturb established industries too much, would help more, partly by giving foreign countries better buying power for farm products, and partly by lowering the prices of things farmers buy.

The intent of this chapter is to test out these various arguments.

Obviously the undertaking would be too large for one chapter if it were to be done with careful attention to details. Its major conclusions will be sound, even if one does find good reason to object to a particular statement now and then.

Neither is the analysis intended to be fundamental and exhaustive. Instead it avoids as much as possible all reference to the economic principle of comparative advantage, which says, in effect, that the people in a protected country do not gain as much from the higher prices of what they sell at home as they lose from not being able to buy abroad in the cheapest markets, and, likewise, to the contrary Republican doctrine that protective duties raise gross incomes more than costs and living expenses. There is little use dragging these into the analysis. The nation is definitely upon a protective basis for the time being. Even if public sentiment should swing pronouncedly in the opposite direction, it would take 25 years as a minimum to get our industries safely back to a natural distribution again. Consequently, the rational procedure at the moment is to accept the protective system and make the best of it in the way of realizing the objectives of the national agricultural policy stated at the end of Chap. II. The questions that will be asked for each agricultural commodity considered, and answered so far as possible, will be as follows: Will higher tariff duties on it raise its price? If so, how much? How will they affect production, consumption, and imports and exports of it? How much will they add to the price paid for it by domestic consumers? Will production and prices be stabilized by it? Finally, these various questions will be answered for all farm products taken together. Somewhat similar questions will be asked about possible changes in duties on a few classes of manufactured products.

The changes in prices and cost rates that are mentioned must all be understood as *relative to the general price level.* The question as to whether or not protective duties raise the general price level is left entirely out of the analysis. The generally accepted statement is that prices of export goods do not have their prices raised, that domestic deficit goods do, that purely domestic goods (not entering into foreign trade) also do, and that, as a result, the average price level, the cost of living, and wages are all placed on a higher level.

THE IMPORT-EXPORT AGRICULTURAL BALANCE

Let us first get the facts before us as to the extent of our agricultural imports and exports and changes in them. In Table 26 are presented index numbers of our agricultural exports in five major groups since 1910. The average for the last 4 years when agriculture has been fairly stable is 20 per cent above that of the 1910 to 1914 period; and for all commodities except

TABLE 26.—INDEX NUMBERS OF AGRICULTURAL EXPORTS, UNITED STATES, 1910–1928 *

(Base average, 1910–1914 = 100)

Year ending June 30	All commodities	All commodities except cotton	Cotton fiber	Grains and products	Cattle and meat products	Dairy products	Fruits and vegetables
1910	78	86	73	82	91	58	77
1911	92	92	91	85	104	93	92
1912	114	100	125	78	115	126	100
1913	110	119	103	143	97	120	134
1914	106	103	108	112	92	103	98
1915	138	189	99	301	126	302	133
1916	118	184	70	237	164	479	134
1917	118	182	70	217	164	716	127
1918	101	165	53	179	197	975	87
1919	145	255	63	272	287	1,287	177
1920	134	207	80	218	185	1,275	153
1921	127	212	64	329	154	524	137
1922	137	218	76	317	153	571	118
1923	112	182	59	246	169	406	129
1924	104	153	67	143	179	451	213
1925	126	167	95	225	140	396	186
1926	106	123	93	117	114	327	200
1927	136	143	131	188	98	288	285
1928	112	138	92	188	98	263	248

* *Foreign Crops and Markets*, p. 488, Sept. 24, 1928.

cotton, 43 per cent above it. The increase in exports of grains, dairy products and fruits and vegetables have more than offset the loss in cotton exports. In the meats group, the losses in exports of cattle and beef have been more than offset by gains in exports of pork products, except in the last 2 years when the European market for pork products has been very dull.

Table 27 lists imports of animal and vegetable products separately and combined from 1910 to 1928. The last column reduces

TABLE 27.—VALUE OF AGRICULTURAL IMPORTS INTO THE UNITED STATES 1910–1927

(Index numbers, base average, 1910–1914 = 100)

Year beginning June 30	Animal products, million dollars *	Vegetable products, million dollars *	Total million dollars *	Total value in terms 1910–1914, million dollars ‡	Index numbers
1910	209	471	680	662	81
1911	244	539	783	827	100
1912	284	531	815	808	98
1913	359	565	924	908	110
1914	337	574	911	912	111
1915	484	706	1,190	1,160	141
1916	560	845	1,405	1,089	132
1917†	604	1,015	1,619	898	109
1918†	707	1,070	1,777	899	109
1919	1,168	1,964	3,132	1,490	181
1920	495	1,446	1,942	844	103
1921	493	786	1,279	855	104
1922	807	1,099	1,905	1,257	153
1923	621	1,096	1,717	1,097	133
1924	673	1,146	1,819	1,194	145
1925	742	1,176	1,918	1,188	144
1926	723	1,182	1,905	1,262	153
1927	737	1,143	1,880	1,258	153

* U. S. Dept. Agr. Yearbooks. Compiled from Monthly Summary of Foreign Commerce and Navigation.

† Monthly Summary of Foreign Commerce and Navigation.

‡ Total value of animal and vegetable products imports divided by Bureau of Labor index of wholesale prices (1910–1914 base).

the combined figures to an index basis after reducing them all to dollars of 1910 to 1914 to get them on a comparable basis. The average index for the years 1924 to 1927 is 149. That for exports computed for the same years and on the same basis would be 118. For forest products, the same comparison is: imports 211; exports 103. For metal products and manufactures thereof: imports 152; exports 168. For finished manufactured products: imports 137; exports 177. For semimanufactured products: imports 137; exports 117. While imports have been gaining on exports in agriculture, forest products and semimanufactured products, the reverse has been most pronouncedly true for manufactured goods.

In Table 28 the import-export balance for agricultural products is shown by years since 1922. Both imports and exports seem to have been rather stable and evenly balanced during the last three years.

TABLE 28.—BALANCE OF EXPORTS AND IMPORTS OF AGRICULTURAL PRODUCTS, UNITED STATES, 1922–1928 (ENDING JUNE 30)

(In Millions of Dollars)

Year	Exports	Imports	Excess of Imports
1922	1,916	1,283	−633
1923	1,799	1,905	+106
1924	1,867	1,717	−150
1925	2,280	1,819	−461
1926	1,892	1,918	+ 26
1927	1,908	1,905	− 3
1928	1,816	1,880	+ 64

Table 29 shows the actual average annual import-export balances for the years 1924 to 1928 for the groups previously named.

It is interesting to compare these figures with domestic production. The total value of all farm products at the farm for the crop year 1927 to 1928 was $12,253,000,000, excluding products fed to livestock and used for seed. The 1927 to 1928 exports are 15 per cent of this amount. But one of these valuations is at the farm and the other in the wholesale market. If both were valued in the wholesale market, the exports would equal around 11 per cent of the production: and the imports also 11 per cent of it. Thus 89 per cent of the production of our farms in 1927 to 1928 found a market at home. About 33 per cent of it was consumed by the farm families on the same farms where produced. The manufacturing exports of 1927 were 5 per cent of the 1925 census figures for value of manufactures for the same year, and the imports 3 per cent of it. There is considerable duplication in the census figures for value of manufactures, but the "value added by manufacture" will not serve either.

Table 29.—Balance of Domestic Exports and Imports for Agricultural Products and Other Classes; Calendar Years 1923–1927*

(In Millions of Dollars)

Commodity Group	Exports	Imports	Excess of exports +, or of imports −
Agricultural †	1,949,247	1,853,046	+ 96,201
Forestry †	156,843	541,430	−384,587
Manufactured foodstuffs	539,368	470,676	+ 68,692
Semimanufactures	638,269	737,167	− 98,898
Finished manufactures	1,769,576	814,321	+955,255
Non-metallic minerals	657,085	22,327	+634,758
Metals and manufactures except machinery and vehicles	444,954	312,428	+132,526
Machinery and vehicles	673,478	263,829	+409,649

* Foreign Commerce and Navigation.

† U. S. Dept. Agr. 1927 Yearbook, p. 1130, Table 472. Compiled from Monthly Summary of Foreign Commerce and Navigation for year ending June 30.

The agricultural products making for an excess of exports over imports, in the order of their importance in 1927 and 1928, were as follows: cotton; grains and grain products, mostly wheat and flour; meats and meat products, mostly pork products; tobacco; and fruits. The agricultural products making for an excess of imports over exports were in similar order, silk, coffee, sugar, oilseeds, hides and skins, wool and mohair, vegetables, chocolate and cocoa, and tea. No other class of agricultural commodities had excess imports of over $25,000,000 value.[1]

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[1] See Table *H* in Appendix for the data.

It is at once apparent that the data on agricultural imports will become more significant if one first removes those products in which we do not compete with other countries; such as silk, coffee, tea, cocoa, spices, bananas, cocoanuts and other foreign nuts, flax, jute, sisal and other foreign fibers, buffalo, kid and other sorts of foreign hides. Table 30 lists the agricultural imports of the really competing products, making a rough sorting according to the class in which each product more nearly belongs. Obviously, no clear line can be drawn. Foreign classes of nuts,

TABLE 30.—IMPORTS INTO UNITED STATES OF COMPETING AGRICULTURAL PRODUCTS FOR YEARS ENDING JUNE 30, 1927 AND 1928

(In Thousands of Dollars)

	1927	1928
Live animals	17,630	26,208
Dairy products	42,100	37,754
Eggs and egg products	7,592	3,710
Hides and skins *	55,156	102,791
Meat and meat products	17,636	23,027
Wool †	80,613	78,047
Miscellaneous animal products	38,090	36,961
Cotton	37,206	44,803
Fruits ‡	21,972	20,280
Grains and grain products	28,480	34,616
Nuts §	26,418	23,997
Oils ¶	63,252	62,055
Oil seeds ‖	44,284	32,710
Seeds	10,351	8,516
Sugar	265,285	245,538
Tobacco	76,672	58,804
Vegetables	38,709	39,185
Miscellaneous vegetable products	16,486	23,804
Total	887,932	902,806

* Excluding buffalo, kangaroo and wallaby, deer and elk, and goat and kid.

† Excluding mohair, alpaca, cashmere, etc.

‡ Excluding bananas.

§ Excluding brazil nuts and coconuts in the shell and coconut meats desiccated or prepared.

¶ Excluding essential and distilled oils, Chinese nut or wood oil, sesame oil and rape oil. All of the vegetable oils are more or less competing and, hence, most of them are included even though, like the palm oils, not produced in the United States.

‖ Excluding castor beans, copra, poppy seed and perilla and sesame seed.

vegetable oils, fruits and vegetables, for example, compete to a greater or less extent with the domestic commodities of somewhat similar type. On the other hand, the domestic production of certain others, such as pineapples, olives, and currants, competes to a very limited extent with that of foreign areas. The total for 1928 of $902,806,000 is to be set over against exports of $1,816,000,000 for the same year that might conceivably have been curtailed for the sake of expanding domestic production for the home market.[2]

Another deduction needs to be made for the imports from the Philippines, which must be interpreted as part of our home market under our existing trade relations. We received $77,744,000 of agricultural products in 1928, and $64,592,000 in 1927. The final figure for competitive agricultural imports for 1928 becomes $825,062,000, which is something like 6 per cent of the value of our domestic production.

THE BASIS FOR THE RATES

If tariff duties are to be the only device employed for raising the prices of farm products by government action, one sort of a schedule of rates is needed; if at the same time or later, some one of the plans discussed in Chapt. VIII to XII following, for making the tariff effective is adopted, then another sort of schedule of tariff rates is needed. In this chapter we will proceed on the first assumption.

Determining the proper basis for rates even on the first assumption is not as simple as commonly thought. The ideal basis is the one first named in the following list; but in the present state of social mindedness of our population there is little chance of its receiving much consideration.

1. *The welfare of the nation as a whole over a period as long as a nation should consider at one time.*—This basis could justify import duties under the following circumstances:

a. Young agricultural industries which will eventually be able to stand alone without any tariff subsidies. The industrial history of the United States and foreign countries has demonstrated repeatedly that a new industry needs help in its early stages. Protecting it with import duties is the simplest of all possible ways to render such aid. But history has also demonstrated that it is a dangerous method to use because such industries seldom realize when they have become strong enough to stand alone.

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[2] In the recent hearings before Congress, L. J. Taber of the National Grange gave $1,200,000,000 as the value of competitive agricultural imports. His figure is based on group totals, whereas the $902,806,000 is what is left after certain non-competing items are removed from some of the groups, such as goat and kid, kangaroo, etc., from hides.

b. For agriculture as a whole, as for manufacturing as a whole in an earlier period in the United States, because the production program of the nation is not in proper balance. Using import duties under such circumstances also is dangerous for the reason that any large industry is likely to represent considerable political influence and to use this in retaining its protection long after it has expanded to proper proportions.

c. For lines of production which are important from the standpoint of conservation of our national resources. For example, it may be desirable to protect livestock products in order to keep cash-crop farming from depleting our soil resources too rapidly. The argument on this basis can be very easily overworked.

d. In emergency conditions such as following a war. It need hardly be stated that difficulty is always experienced in removing the duties after the emergency is over.

e. To assist some section of the United States temporarily in order to hasten its economic readjustment. This might have been used as an argument for protection of flaxseed production in our Northwest during the past several years.

f. To assure a supply of food and clothing in time of war. Needless to state, this basis for protective duties can be invoked to an extremely limited extent in the United States.

As the matter now stands in the United States, we have imposed tariff duties on industrial products especially for nearly all of the foregoing reasons. Once having done so, we have rarely been able to remove them again. As a result, the nation is operating like a man walking on stilts. Prices are high, wages high, rents high, costs high, middlemen's margins high, with a great deal of uneconomic production in industries which cannot stand alone without subsidies from the consumer in the form of higher prices of their products.

2. *The welfare of agriculture as a whole without regard to*

the welfare of the rest of the nation.—On this basis, tariff duties would be imposed that would help agriculture though the rest of the nation had to pay for it. This would justify duties on many agricultural products, but not on all of them. Some would cost agriculture as a whole more than any farmers would get out of them. As will be explained later, this would be true of a duty on sugar and probably of a duty on hides.

The American Farm Bureau Federation took this sort of a basis for rates, although only in a half-hearted fashion, at the time the Harding Tariff Act was enacted. Its officers never came to any clear unity of opinion on the subject; but in general the position was that the Federation was a national farmers' organization in which nearly all of the states were represented and that no duties could be favored which would cost the farmers as a whole more than any particular group would get out of them. An inquiry sent out to the state bureaus with respect to tariffs on seeds brought back the information that only a few of the seed-growing states favored such duties. The seed-buying states were opposed to them. A similar inquiry as to duties on hides brought back the information that only in the important beef-cattle sections were duties wanted on hides. But the Federation proved to be too weak an organization to carry out such a program. A group of western senators and congressmen, dominated by the late Senator Gooding of Idaho, who wanted higher duties on wool and a few other products at all costs, for personal or political reasons, or both, formed a tariff bloc of their own and undermined the program of the Federation. Before such a basis for tariff duties can be adopted, a long program of education of our farm population is needed. Our farm people must first learn to forget their old political alignments and prejudices and submerge their narrow local interests in the good of the whole.

3. *Duties on each product at the level which will add most to the average price of this product.*—This differs from the above in that duties will be included on some products that will help the growers of them, but at a cost to the rest of the farmers that exceeds what the growers gain. The most important reason that farmers should oppose this basis is that if it comes to be generally adopted it is impossible to deny to the manufacturers of any product any duty that will benefit them at the expense of the

rest of the nation; and when all the manufacturers get all the duties that can be justified on this basis, the prices of the goods bought by farmers will be raised to such a level that the farmers as a whole will have smaller net incomes than they would if no tariffs at all had been imposed. The cost of living is raised over the whole nation, and along with this, wages, rents, middlemen's margins, and transportation costs.

This basis comes fairly near to being the actual basis on which tariffs are being made at the present time.

4. *Duties on each product that will keep out all importations of it whatever.*—First, importations at all seasons of the year; for example, of winter eggs, early tomatoes from the west coast of Mexico, and early potatoes from the Bermudas. Second, all types of products which in any way compete with the domestic types, such as Spanish onions, Brazil nuts, Patna rice, and even bananas. Third, at all points; for example, corn in New England and oats in New York State. This seems to be what most of the farm groups of producers are now asking, except in the case of sugar, wool, hides, and a few others. They have not yet developed courage enough to go the whole way with these. In general, just as soon as a snitch of some foreign product appears in our markets, there is a howl from the producers of it for higher duties. Farmers and manufacturers are alike in this respect.

It is much to be doubted that the foregoing represents the best policy, for the following reasons:

a. With certain farm products, such as flaxseed, dairy products, and beef, whenever production is close to the exporting point, prices become very unstable. The effect of the import duty on prices goes on and off alternately. Inasmuch as it takes a high duty to keep imports out at all times and places, the duties worked out on this basis tend to be high. Consequently, the ascents and descents in prices are steep. The demand for most farm products is so inelastic, and the supply so difficult to increase immediately, that the prices of them will rise to the famine stage under very high tariff duties and then drop abruptly after production catches up. The new production is likely to find prices already too low for any profit when it arrives on the market. As a result, the average price over the year, and particularly the net income, is more likely to be lowered than raised with excessive duties.

b. Tariff duties made high in order to prevent importations in certain localities most accessible to foreign supplies will make prices excessively high in these areas whenever the local production is unusually small. Ordinarily, the consumption is so small in these sections that the price in the main producing areas is raised little or none by the high duties. Corn, oats, and hay illustrate this phase of the problem.

c. Duties which make prices excessively high in deficit areas, in certain years, particularly arouse hostile feelings in these sections. They array the eastern farmers against the western farmers. This is undesirable from the standpoint of successful national agricultural programs.

d. The famine prices which consumers may have to pay during periods of a week or two rouse opposition to agriculture in the cities and make it difficult to secure support for much more important measures for agriculture. They cause the cry of food monopoly to be raised and hinder the program of cooperative organization.

GENERAL EFFECTS OF AGRICULTURAL DUTIES

Prices.—Duties on farm products as upon other products will raise the domestic price of them approximately the full amount of the duty provided the country is regularly importing the product. The sugar and flaxseed duties are good examples of such duties. If the domestic production is somewhere nearly equal to domestic consumption, little or none is imported in years of good crops, and the tariff duty is not effective at all, or is effective in some months and not in others. If the country is definitely upon an export basis for a commodity, a tariff duty on it is not generally effective. Special types or qualities of the commodity, however, may need to be imported—as for example, Patna rice, needed in making soup, grown in the Orient. If the import and export types of a commodity are entirely non-competing, the tariff duties on one do not affect imports and prices of the others. If one can be substituted for the other to some extent, as hard winter wheat for hard spring wheat, or pork for beef, then the effect of tariff duties on the price of either one is reduced. In a large country such as the United States, a commodity like corn may be imported on the east and west coasts, and exported from the Corn Belt in between. Without tariff barriers, a large volume of importations of farm products would arise merely because of the nearness to our principal consuming areas of parts of Canada and Mexico, or even of South America and Europe when ocean *versus* railway freight rates are taken into account. Much butter, for example, would move from Canada into our eastern markets, and we could, in turn, export more butter to Central and South America, if the duty on it were removed. In general, imports which develop because of location advantages affect the prices of products only locally, having little or no effect on the average price in the country. Preventing such imports by tariff barriers raises the price in the locality by the full amount of the duty only if it is still cheaper to import than to ship from elsewhere within the country. A duty on cream cannot raise the price of it in New England beyond the point where it is cheaper to ship it from Wisconsin.

If a foreign country has lower transportation costs to the principal consuming centers of a country than its own producing areas, the effect of the tariff duty is, in general, lessened by this amount. Argentina flaxseed has lower costs to eastern crushing mills than does Dakota flaxseed, and hence the 40 cent tariff duty is not fully effective.

Farm products may be imported into a country either in raw or in manufactured form—as wheat or as flour. If the tariff duty on the manufactured product is not as high as the duty would be on the raw materials used in it, the imports come in that form instead. In general, the actual rates on manufactured products are considerably higher than on the raw material equivalent—the manufacturer demands protection on his ''conversion costs,'' the same as the farmer gets on his ''production costs.''

Imports and Exports.—It follows from the foregoing that the general effect of tariff barriers is to reduce the volume of both imports and exports. Past history indicates that it has less such effect than one would suppose. Trade between countries has a way of persisting in spite of obstacles. You may check it in one commodity; but the ingenuity of man soon finds a new commodity to exchange—invents it if need be. But that tariff duties do tend to reduce the volume of trade between countries, few will deny. It will, of course, be hard to prove it statistically for a rapidly developing nation like the United States. The question always is, what would have been our volume of exports and imports if trade had been less hampered by tariff restrictions? The World War spoiled all comparisons for the Taft, Wilson, and Harding tariffs.

So far as any one group of products, such as the agricultural group, is concerned, the effect on the volume of foreign trade may be rather different from the total effect. A protected manufacturing industry may convert the farm products of the nation into manufactured goods and export them as such, thus reducing the apparent exports of agricultural products. It may at the same time be allowed to import wool, hides, silk and other raw materials free of duty, thus increasing the import totals for agricultural products. Both of these things have happened to the United States. Taking the agricultural products by themselves, there can be no doubt that we are importing and exporting less of them than we would if the purely agricultural duties were removed. This will be made abundantly clear later. The statistics of agricultural imports and exports can be made to point no moral on this subject. The index of exports for 1923 to 1927 is approximately 6 per cent below the agricultural production index; the index of imports around 21 per cent. Cotton exports figure most largely in the former; a rising scale of living in the latter. What these indexes would be like with the duties of wool, sugar, flaxseed, wheat, oranges, and lemons removed, we can only surmise.

A reduction in the volume of imports and exports means a closer approach to agricultural self-sufficiency.

Internal Trade.—Shutting out Canadian butter, milk, cream, oats, and other farm products from our eastern markets causes more transportation and trade in these within the United States. This may be taken as an example of the effect of tariff barriers on internal trade.

Buying Prices.—The higher domestic prices for farm products resulting from effective tariffs are passed on to the consumers in higher retail prices. How much they raise retail prices is not known, but surely much more than the effective tariff duties amount to. The higher farm and wholesale prices mean higher interest charges on carrying the goods and higher middleman margins generally. Many of the margins or charges for marketing services are figured on a percentage basis, and are compounded and recompounded as the goods pass from one middleman to another. Profits are reckoned on a percentage basis also. The additional transport and handling of the larger internal trade mentioned above all costs money. It is a commonly recognized fact that margins and marketing costs are much higher in the United States than in most other countries; and there is little doubt that our system of high tariff duties is an important factor in this. These higher middleman margins are combined with the direct tariff effects to give the United States consumer a purchasing power for his dollar of wages or income which is one of the lowest in the world. The farmers pay toll along with the other consumers.

Frequently in the hearings on the McNary-Haugen bills, and again in the recent tariff hearings, the statement has been made that considerable percentages could be added to the price which the producer receives without adding anything to the price the consumer pays. The basis of this claim is that the spread between producer and consumer prices is so wide that it will absorb the higher price to producers, and consumers will not notice the difference. It is entirely proper to remark at this point that the railroads might argue on the same basis that a considerable rise in freight rates would not reduce prices to farmers or add to consumer prices. The evidence is very clear that middlemen margins do not squeeze up and let the additional freight costs in with no effect on producer and consumer prices. It is equally clear that they do not squeeze up and absorb additional tariff duties. On the contrary, the additional tariff duties are, in many cases, considerably increased, as above explained, by the time they have reached the consumer. Take the case of a tariff on hides, leather, and shoes. As much as 2 years may intervene between the slaughter of the steer and the sale of the shoe. A duty that would add 50 cents to the cost of the hide would, in the opinion of those who know the shoe trade, be increased to at least $1 by the time it reached the buyer of the shoes, instead of nothing, as has recently been claimed by advocates of such a tariff duty. Others claim that it will add only the amount of the tariff duty, that the jobber and retailer will take the same margin in cents as before, and thus add only the duty to the price. This would mean, to take the case of the retailer, that when he pays $2.90 for a pair of shoes that he sells for $4, he would then pay $3.40 and sell for $4.50. If so, his markup would be reduced from around 40 to around 32 per cent. No doubt many retailers at first work out their prices on this basis. But the whole history of retail margins indicates that this practice quickly changes, and that presently the same shoes are priced at $4.75, representing the same 40 per cent margin as before. Shoe merchants' margins are higher percentages now than when shoes were much cheaper. There are good reasons for believing that the Tariff Act of 1922 is a factor in the widening margins noted in Chap. I. One would expect many years to pass before it produced its full effects.

Price Stability.—It has long been observed that under the system of commercialized agriculture that has developed, prices of farm products, especially at the farm, fluctuate more widely than formerly. The more commercialized it becomes, the more the fluctuations tend to be. Many farm leaders consider this instability of farm prices as one of the major problems of the day. It is popularly supposed that higher tariffs tend to correct this instability. Yet both the evidence and the theory are to the contrary. Put up a very high tariff wall and prices at home will rise very high before domestic production catches up and levels them out again. With a moderate tariff, foreign supplies flow in and keep prices from rising to dizzy levels while domestic production is catching up. No doubt the dizzy prices hasten the catching-up process; but they also intensify the price slump following. The popular error on this point arises from focusing attention on the checks and slight temporary recessions in prices which occur just at the point where it pays to import. But these temporary effects are of slight importance compared with the longer ascents and steep declines that occur behind a high tariff wall.

It is not within the province of this chapter to analyze the effects of instability of prices. But it should be pointed out that whenever a high tariff premium does stimulate production of such products to the export point, the chances are that the new production will suffer severely in the price slump following, since it is likely to be high-cost production. A tariff rate which approximately offsets the normal comparative advantage of the product in the importing country does not have as disturbing an effect on the domestic price as does a high tariff rate.

Associated with the instability of prices caused by excessive tariff duties is, apparently, an instability of production. Marketing tends to be made more disorderly as well as production.

General Effects.—Tariffs on agricultural products may keep a nation from becoming too largely urban, if the nation is already largely urban and industrial. They would have this effect in England. They have had such an effect in Germany. The result is more farmers and smaller farms, and a smaller volume of output per person engaged in agriculture. Agricultural tariffs may also help infant agricultural industries to get a start—as has been thoroughly tried out with sugar beets in the United States. But natural advantages figure so much in agriculture, and economic organization so little, that infant industry protection has much less effect than in manufacturing.

EFFECT OF AGRICULTURAL DUTIES BY COMMODITIES

An examination of the tariff list reveals only two competitive products which do not now have tariff protection—cotton and hides. All the others on the free list—coffee, tea, bananas, silk, sisal, etc., are non-competitive. Not much room is left for expansion of the home market and raising prices to producers. Apparently, the end must be obtained mostly by raising the existing tariff rates. But they seem to be rather high already. The ratio of duties collected to values of dutiable agricultural imports, including sugar, wool and tobacco, is running just under 40 per cent. Nevertheless, we shall not be dismayed, and shall proceed to examine the proposition commodity by commodity. Let us turn to the free list first.

Cotton.—It is generally assumed that a duty on cotton will have no effect on the price of it, in view of the fact that we export nearly 60 per cent of the crop; yet the fact remains that we also import about 375,000 bales a year. Of these imports three-fourths is long staple, 1⅛-inch or over, mostly from Egypt and Peru, and about one-fifth is very short staple from China and India. A large part of the production of the United States is of shorter staple than our cotton mills can use. Of the mill consumption of cotton for last year, 57 per cent was 1 inch or over, whereas of the available supply of cotton in the United States on October first, carryover and new crop, only 35 per cent was of 1 inch and longer staple. If a duty of 15 cents a pound were levied on cotton imports, the production of long-staple cotton would be increased in the western irrigated districts, and to a limited extent the production of medium-staple cotton. Imports would decline possibly to the point of being used only in cotton goods for export under the drawback provision. Perhaps as much as $30,000,000 might be cut from our import total. The price of at least 500,000 bales of domestic cotton would be increased by somewhere between 5 and 10 cents a pound, and as much as $15,000,000 might be added to the gross income of cotton growers in the United States. One of the important effects would be an increasing substitution by manufacturers of medium-staple for long-staple cotton. The additional cost to consumers in the United States would be considerably more than the additional income of the cotton growers—easily twice as much. The price of longer stapled cotton would rise very high in the years when there was a short crop in United States, perhaps clear to the limit of the duty, and would include a small premium in other years. The level prices for ordinary cotton would be affected little if at all.

Hides.—The import balance of the United States in hides comprises mostly cattle hides, calfskins, and goat and kid skins. What the shoe manufacturers would like is free hides and a duty on shoes. What the cattle men would like is a duty on hides and no duty on shoes. Ever since the Taft administration the two interests have compromised by keeping both hides and shoes on the free list. The imports of shoes have been small and the manufacturers have not cared much for a duty to protect them. Recently, however, a few Europeans have adopted American machine methods of making shoes and are selling certain types of shoes in the United States. In consequence, the manufacturers are now strongly insisting upon a duty on shoes; but the cattle men are equally insistent upon the duty on hides. Assuming that the hide is equal to one-eighth of the value of the carcass, a duty on hides equal to 40 per cent of their value, which is about the average of the agricultural duties, would add about 5 per cent to the value of the animal. If a cattle man was producing on a $10-a-head margin for his own labor and management before, he would now have close to a $15 margin. A duty of this amount might easily add $40,000,000 to the gross income of agriculture. There can be no doubt that it would increase cattle raising somewhat; but it would not reduce the imports of hides and skins greatly. The people of the United States wear out the leather made from many more animals than they consume the meat from. Any increase in cattle production that is within reason would not cut more than $10,000,000 from our imports of hides and skins. The average farm family in the United States wears out about seven pairs of shoes and the average city family at least ten yearly. A 40 per cent duty on hides would add at least 50 cents to the leather cost of a pair of shoes and probably a dollar to the retail cost. It might cost farmers alone as much as $50,000,000, and city people several times that amount. It would be a large revenue producer for the government. Its most serious effect would be upon the exporting leather and shoe manufacturers of the United States. Those making shoes for export from imported hides and leather would recover their additional costs in large part from the drawback, but those making such shoes out of domestic hides would be forced out of business. Hides and skins made up 8 per cent of all agricultural imports in 1928, and 22 per cent of the competitive list.

Sugar.—Of the farm products now receiving protection, sugar represents 13 per cent of all agricultural imports, and 36 per cent of all the competitive imports. The duties collected on sugar averaged 53 per cent its value from 1923 to 1927. The tariff rates were nearly doubled in 1921 and 1922, and yet domestic production has averaged only 56,000 tons more since then than under the 1913 tariff rates, whereas imports have increased by a million tons. There has been some increase in beet-sugar production, but it has been nearly all offset by the losses in cane-sugar production, due, in part, it is true, to ravages of plant pests. Beet-sugar production has averaged less in 1925 to 1927 than in the 3 years previous. The effect of the tariff has been to increase production in Hawaii, Porto Rico, and the Philippines, rather than in the United States. Our imports from these islands averaged a half million tons more in 1925 to 1927 than in the 3 years previous. The present tariff, assuming that it is fully effective, adds perhaps $60,000,000 to the gross incomes of the sugar producers in our insular possessions, and only $40,000,000 to the gross incomes of the growers in continental United States; but in excess of $50,000,000 to the amount paid for sugar by farm families in the United States. The average farm family consumes 375 pounds of sugar in a year, and the present tariff is effective in their wholesale market to the extent of 1.75 cents per pound. The tariff duty on sugar could be still further increased with still further help, principally to the sugar growers of our insular possessions, and at still greater cost to consumers. Nothing short of exorbitant duties would increase greatly the production within the continental United States, at least until the present period of overproduction of cane sugar comes to an end.

Wool.—In the case of wool, the tariffs amounting to 31 cents per pound of scoured content imposed in 1922 have apparently had some effect in expanding domestic production. The number of sheep on farms has increased from around 36,000,000 in 1922 to probably 44,000,000 in 1928. In the days of the 1907 tariff, of the "indefensible schedule K" of President Taft, the number of sheep ranged from 44,000,000 to 45,000,000. The production of fleece wool in the United States increased from 223,000,000 pounds to 272,000,000 pounds between 1922 and 1927, and is higher now than at any time since 1911. Our imports of wool have declined from 366,000,000 pounds in 1922 to 248,000,000 pounds in 1928. In the same period, however, our consumption of wool seems to have been declining at the rate of 5,000,000 to 10,000,000 pounds per year, due largely to substitutions of other clothing materials and probably to a greater use of shoddy, both stimulated by the somewhat higher domestic prices of wool. The increase in the number of sheep in the United States must be interpreted in the light of the fact that an even more pronounced increase has been taking place in the world at large, the 1927 flocks being 65,000,000 or one-fifth larger than the average for 1921 to 1925. The usual explanation of world increase is the high price of mutton that has prevailed ever since 1921. The price of lambs in the Chicago market since 1924 has averaged twice that of the 1910 to 1914 period. Accompanying these increases in numbers of sheep was a decline in prices received for wool by producers in the United States from 39 cents a pound in 1923 to 31 cents in 1927. One is disposed, therefore, to conclude that imposing the 1922 tariff rates has had only a small effect in increasing the production of wool.

There has also been a significant shift in the classes of wool imported under the present tariff. Coarse carpet wool is allowed entry free of duty, on the theory that it does not compete with domestic classes of wool, our imports of it coming from the mountainous areas of the United Kingdom, China, India, Palestine and Syria, and Argentina. Nevertheless, since the tariff went into effect, our imports of carpet wool have ranged around 140,000,000 pounds as compared with about half that in the period from 1913 to 1920. Imports of clothing wool, used in making worsteds and the like, which ranged from 200,000,000 to 400,000,000 pounds per year from 1914 to 1921, have declined to an average of 17,000,000 pounds per year since 1922. The imports of combing wools, from which our finest clothing is made, have, in turn, increased from around 15,000,000 pounds per year to 160,000,000 pounds per year. Changes in types of clothing worn have, no doubt, been a major factor in these shifts. But changes in manufacturing practices have probably figured also. Apparently, the mechanics of the present tariff schedule has also played a part in these shifts. This is the first time that the tariff rates have been based wholly on a scoured-content basis. The clothing wools lose much less grease in scouring than do the combing wools.

To complete the account, for reasons not readily apparent, the premium in the Boston market over the London market has apparently been declining, from 41 cents a pound for fine staple wool, scoured, in 1922 and 1923, to around 20 cents in 1926 and 1927, and around 30 cents just at present. This 20 to 30 cents probably means less than one-third of this amount in prices to producers for raw unwashed wool.

If the present tariff were fully effective, it would add at least $25,000,000 to the income of the wool growers and considerably more than this amount to the cost of the wool used by woolen manufacturers in the United States, since woolen mill consumption is about twice the domestic production. Abundant evidence as to retail-clothing prices points to a manifolding of this wholesale margin by the time it is passed on to the consumers.

Since the London wool market is larger than the Boston wool market, it is the stabler of the two. The fluctuations in the spread between these two markets therefore indicate that the tariff is making prices in the Boston market more unstable.

Higher tariff duties on wool would no doubt stimulate some further increase in production and curtail imports still further. But most of the evidence points to no large increase unless the new rates were very high. The duties now imposed equaled 46 per cent of the value of the wool imported in 1927. Figured at the farm, the percentage would be somewhat less. The stimulus that higher duties would give to the use of silk, and especially rayon, might easily offset all the increase in the home market. One can therefore look to no large reduction in the $80,000,000 of wool imports as a result of reasonable tariff increases. Our wool imports are 4 per cent of our total agricultural imports and 10 per cent of the competitive imports.

The tariff duties imposed on live sheep and mutton in 1922 have principally reduced the amount of exchange of these between the United States and Canada and, hence, have affected production locally; but they have probably also stimulated the growing of feeder sheep on our ranges. Higher duties might shut out most of the 40,000 head of sheep and 3,000,000 pounds of mutton now entering the United States and cut $500,000 from our imports of these.

Flaxseed.—Another product clearly in the deficit class is flaxseed, of which around 20,000,000 bushels per year have been imported since 1922, roughly a half of the domestic consumption. Raising the duty from 40 to 70 cents per bushel would probably cause the 20,000,000 bushels to be produced at home and cut off $40,000,000 of imports per year. The present tariff rate is not altogether effective because the cost of transporting flaxseed from Argentina to New York is 7 or 8 cents less than from the producing areas in the United States. The duties now collected are only one-fifth of the value of the flaxseed imported. The present duties are adding about $9,000,000 to the gross income of flaxseed producers and costing the manufacturers about $17,000,000 more in the wholesale market. What the cost to consumers of paint and other linseed-oil products is difficult to estimate. Duties raised to 70 cents a bushel would change the two foregoing figures to around $12,000,000 and $25,000,000, respectively. A tariff as high as 70 cents a bushel would also add an important new element of instability to flaxseed prices. Whenever the season was favorable, the domestic supply would threaten to exceed domestic demands and the prices would sag quickly, and as the weather promised good or bad the prices would make wide sweeps upward and downward. The 70-cent duty here assumed is probably the maximum that could be imposed without causing an export surplus and low prices every year of good weather, and hence decreasing the gross income of the flaxseed growers. Quite possibly, a 60-cent duty would produce higher average prices than a 70-cent duty. The 1924 crop of flaxseed in the United States was so large that the tariff premium of only 40 cents vanished for several months. If the tariff had been 70 cents a bushel, the decline would have been much more severe.

Tobacco.—Our imports of tobacco have averaged about 75,000,000 pounds a year since the World War, valued at around $60,000,000. This is mostly cigarette leaf and cigar filler of types not grown in the United States. About $14,000,000 worth of it in 1927 and 1928 was cigar wrapper, which competes to a considerable extent with wrapper leaf grown in the Connecticut Valley and elsewhere. The duty on this wrapper leaf is $2.75 per pound, which is more than the import value of it. The duty on the other tobacco imported is 35 cents per pound, which is over half its value. Raising these duties would increase the revenues of the government, increase production somewhat, and curtail imports in about the same proportion. Much of the imported tobacco is used as blends with domestic types and thus provides a wider market for them. Other import types of tobacco represent luxury consumption of those who will pay the extra price. The same is true of the imports of manufactured tobacco, cigarettes, and cigars not included in these figures. Our exports of tobacco are very large, ranging around 500,000,000 pounds per year, besides 7,000,000,000 or 8,000,000,000 cigarettes, 10,000,000 cigars, and 5,000,000 pounds of plug and smoking tobacco. The tobacco acreage has increased a half since 1910 to 1914, along with the increase in consumption. There has been about an equivalent increase in imports. If tariff duties are to be increased, this is probably about as good a place to increase them as anywhere. Higher duties will add appreciably to the incomes of the producers of import types of tobacco and will add very much to the revenues of the government. Tobacco consumption is generally recognized as a type of consumption which can stand taxation.

Dairy Products.—In 1927 and 1928, the value of imports of dairy products averaged $40,000,000, and of exports $17,000,000. But cheese imports account for $24,000,000 of the imports and only $1,000,000 of the exports. The Tariff Act of 1922 raised the duties on foreign cheeses from 20 per cent *ad valorem* to 5 cents per pound. These cheeses mostly come from Italy, Switzerland, Greece, and Argentina and are largely bought by our foreign population. Swiss cheese is the only one which meets strong domestic competition and the duty on this has recently been raised to 7.5 cents per pounds. Somewhat higher duties would reduce importations of cheese considerably in time, especially as the new types of domestic processed cheese came to take the place of some of them. Very high duties would reduce the consumption of many of them at once. Imports of butter have averaged only 7,000,000 pounds a year, valued at around $3,000,000 since 1924. Since the duty was raised from 8 to 12 cents a pound in 1926, small quantities have dribbled in at crucial points in the market situation from New Zealand, Argentina, Denmark, the United Kingdom, and Canada. Still higher duties would stop these dribbles altogether; but they would need to be 20 or 25 cents a pound to do this, because, for very short periods, prices of butter would rise very high if a domestic shortage developed, oleomargarine being the principal offsetting influence. The duty on milk and cream could very consistently be raised to twice the present level of 2.5 and 20 cents a gallon, respectively, and this would have the effect of largely checking the $9,000,000 worth of imports of these commodities, mostly cream from Canada. The eastern markets would then get more of their cream from Wisconsin and Minnesota. The casein imports worth around $3,000,000 a year could also be stopped by higher duties. Our exports of dairy products are mostly of condensed and evaporated milk, but from 5,000,000 to 8,000,000 pounds of butter are exported annually, mostly to Central and South America.

The butter tariff duty is an outstanding example of a tariff duty producing instability. A tariff of 8 and then 12 cents seems to have kept the price in New York about 5 cents higher as an average than that in London; but the premium has ranged from nothing to over 12 cents. From 1922 to 1924, prices in Denmark on export butter ranged from 30 to 41 cents a pound, or 11 cents, and in New York for a similar grade, from 39 to 55 cents a pound, or 16 cents. In 1925 and 1926, prices were about the same in the two markets, sometimes higher in Denmark. Since the 12-cent tariff went into effect, Denmark prices have again been lower, ranging from 32 to 41 cents, as contrasted with a range of 40 to 55 cents at New York. This recent situation is not due to the tariff duty, but to the fact that butter production is very large just at present in Denmark and other European countries. The additional duty of 4 cents a pound has added little if anything to the spread in prices between the two countries. For periods of a few weeks in the fall the 12-cent duty may raise prices a few cents higher than an 8-cent duty would, but the recession in price which follows is likely to offset fully the greater rise in price. Butter production tends to lag behind prices by a period of from 1 to 6 months. When prices rise sharply, production starts upward slowly and does not reach its peak until some time after prices have turned downward again. Much of the new production stimulated is, therefore, at a loss. These estimates must be interpreted as in combination with the usual seasonal movements of butter production.

Duties on butter are probably adding as much as $50,000,000 to the gross receipts of the dairy farmers selling butterfat, and perhaps an equal amount to the receipts of farmers selling milk and cream for use in cheese, ice cream, condensed and powdered milk, fluid milk, etc. Only about one-fourth of the total milk production goes into butter, and although the various users of milk compete with each other in a general way, local factors enter into the situation to such an extent that cheese and milk and cream tariffs determine the level of domestic prices much more than does the butter tariff. An additional duty on butter would add little or nothing to farm incomes, but higher duties on cheese, cream, milk, and casein would add considerable—perhaps as much as $25,000,000, taking the country as a whole. The cost of the dairy products tariffs to the consumers is not greatly larger than the additional income of the producers.

Eggs.—The imports of shell eggs and of frozen and dried eggs reduced to a shell equivalent have averaged 43,000,000 dozen per year, and our exports, practically all of shell eggs, 28,000,000 dozen per year. All but 350,000 dozen of the imports are of frozen or dried eggs. The imports represent only about 2 per cent of our domestic production. The small imports of shell eggs are from China and Canada mostly, and those of frozen and dried eggs almost wholly from China. Our exports consist largely of small or pullet eggs to Cuba and Mexico, and the

United Kingdom and Canada have been taking about 10,000,000 dozen a year recently. Egg freezing has been developing rapidly in the United States, doubling since 1920, so that now 55 per cent of the domestic consumption of frozen eggs, and 40 per cent of both frozen and dried products are produced in domestic plants. The use of egg products is also developing rapidly. Shell eggs were free of duty under the 1913 Tariff Act, and have had a duty of 8 cents per dozen since 1922. Imports of shell eggs have been almost entirely checked as a result, but exports have been curtailed also. Further duties would check these imports still further, if $80,000 a year of imports is worth legislating about. The Tariff Act of 1922 raised the duty on frozen eggs from 2 to 6 cents per pound, and on dried eggs from 10 to 18 cents per pound. Apparently, further duties on frozen eggs still within reason would reduce imports greatly. But a very heavy duty would be required to check the imports of egg powders. The total value of egg imports, however, was only $8,000,000 in 1927.

The present duties are effective for approximately the full amount on the 80,000,000 dozen of eggs frozen in this country, and to an uncertain extent on the rest of the 2,000,000,000 dozen of eggs produced in the United States. Only in the winter and in certain areas does the general duty on shell eggs affect the domestic price. A liberal estimate of the increase in gross income of the poultrymen of the United States because of the present duties would be $20,000,000. Additional duties might double this amount. The additional cost to the consumers would not be greatly more than the increase of income to producers.

Beef and Veal.—The United States has been on a net importing basis for beef and veal for several years, but this reflects the influence of a temporary recession in the industry, from which it will surely recover very shortly. Even though exports may again exceed imports in a few years, this condition will probably last for only a short time. The foregoing statements, however, must be understood in the light of the information that the excess imports at present principally take the form of feeder cattle, to be fattened in our Corn Belt, shipped in from Canada primarily, and Mexico secondarily. The imports of beef and veal, totaling 50,000,000 pounds in 1928, have come mostly from Canada, New Zealand, and Australia (Argentina beef exports are now all going to Europe). Higher duties would for the most part, have shut out these imports valued at over $6,000,000 in 1928, and also the feeder cattle imported, valued at nearly $30,000,000 in 1928. In 1927, these two items totaled only $10,000,000, which is more nearly normal. In the long run, the effect of higher duties will be not so much to increase beef production as to cause the substitution of pork and dairy and poultry products for it. Some of this effect will be felt very soon. Exports of beef from the United States take the form of preserved meat. Higher tariffs on feeder cattle benefit the range cattlemen at the expense of the Corn Belt feeders; but higher duties on beef will compensate the Corn Belt for its losses on this score whenever fresh beef is imported in appreciable quantity.

In a large part of the United States, the factors determining the price of cattle and of beef and veal are so local that it is not reasonable to assume that the tariff is fully effective, but it seems probable that the duty on fresh beef and veal of 3 cents a pound and on live cattle of 1.5 cents per pound are largely effective on at least two-thirds of the meat produced and consumed in the United States. If so, this represents an addition to the income of the cattlemen of well on toward $175,000,000, and an addition to the expenses of beef and veal consumers of perhaps a third more than this sum. Higher duties would double this amount in some years, but might largely dispense with it in other years when an export surplus developed, so that the net effect is hard to forecast. When a product is so near to the exporting point as is beef in the United States, tariff duties are strongly conducive to instability of prices, and the higher the tariff the more the instability. The tariff goes on and off according to temporary conditions of competition in this and foreign countries.

Pork and Lard.—With exports of pork and pork products totaling over $120,000,000 a year, little importance can be attached to importations valued at $4,766,000 in 1927 and $1,766,000 in 1928, of live hogs from Canada, mostly, and consisting largely of feeder pigs. Nevertheless, even these imports could be excluded if desired. The effect would be to increase slightly the gross incomes of the farmers who produce feeder pigs and decrease slightly the income of those who buy them. In general, it would act as somewhat of a check upon the practice of producing feeder pigs in one section and fattening them in another.

Vegetable Oils.—The total imports of vegetable oils and oil seeds, excluding flaxseed and linseed oil (considered earlier), coconut and copra, Chinese wood or nut oil, rape and sesame oil, poppy seed, and perilla and sesame seed, and castor beans, because either non-competitive or produced in the Philippines, were valued at $41,000,000 in 1927 and $37,000,000 in 1928. This represents a great decline from the imports of the war period and just following, partly the result of a return to normal trade relations in Europe, and partly because of the duties imposed in the Act of 1922. Imports of peanut oil have declined from 154,000,000 pounds in 1919 to 5,000,000 pounds in 1928; of soybean oil, from 336,000,000 in 1918 to 15,000,000 in 1928; and likewise with most of the minor vegetable oils. Their place has been filled by cottonseed oil, of which exports are greatly reduced, and by increased shipments of coconut oil and copra from the Philippines; and also by the use of more lard and other animal fats in butter and lard substitutes. Our cottonseed oil supply at present barely takes care of our own needs and those of Canada. The remaining imports of the foreign oils, excluding coconut oil, are mostly for special uses that require them or can stand the extra cost imposed by the tariff duties. Further duties would increase the use of coconut oil and animal fats and decrease the exports of cottonseed oil still further; and they might stimulate the growing of peanuts and soybeans for oil, although, as a matter of fact, the present duties have not had this effect. It is not probable that such higher duties would reduce imports more than $15,000,000 or $20,000,000 more. Too many of the remaining uses are special.

Comparison of prices of cottonseed oil in this and foreign countries before and after the Tariff Act of 1922 went into effect indicates that the present duty on cottonseed oil has been effective to the extent of at least 0.5 cent and possibly 1 cent per pound. The duties on peanut oil and soybean oil have apparently been even more effective, in view of the fact that imports of them still continue. No doubt the imports of these vegetable oils have been of special types, and the prices of the ordinary kinds of oil produced in the United States have not been affected by the full amount of the tariff. But an increase in price of only $10 a ton represents $70,000,000 when applied to the 7,000,000 tons of cottonseed, peanut, and soybean oil produced in the United States. Further duties would not increase the effect of the tariff as long as we continue to export cottonseed oil to Canada, which apparently will be for a long time. The present tariff is effective to its present extent largely because former prices of vegetable oil in the United States and Canada reflected costs of transportation to Europe, whereas now they reflect transportation costs only to Canada. Further tariffs on the special types of imported vegetable oils named above will be passed on to the consumers, but will have little effect on the prices of our domestic oils. No doubt, the present vegetable-oil tariff schedule is adding as much as $150,000,000 a year to the prices paid by consumers.

Wheat.—Since 1924, when the tariff on wheat was raised to 42 cents per bushel, the imports of wheat have ranged from 6,000,000 to 15,000,000 bushels per year, these imports consisting of spring wheat from Canada. But nearly all of these imports have been for milling in bond for export as flour. The amounts upon which duty has been paid for consumption in the United States have been very small—1,934,358 bushels in 1925, and less than 200,000 bushels all other years since 1924. The duty collected on wheat in 1927 was only $8,946. In 1923, under the 30-cent tariff, 14,472,000 bushels paid duty, but this was a year of short harvests when the net exports of all wheat except durum from the Pacific ports was only 51,000,000 bushels. With a tariff as low as 30 cents, some wheat will be imported any year when the Canadian crop is large or relatively high in protein content and the reverse of these conditions maintains in the United States. With a 42-cent duty, only an occasional carload will enter even under the above conditions, and this will be when the markets in the two countries get out of their usual relation to each other for a few days, as often happens.

The year of short crop may not be far distant, however, when the wheat tariff may be more effective than any yet in preserving the home market for wheat. Subtract durum and Pacific-coast exports from the rest, and the net exports from the United States range as follows from 1922 to 1926, in millions of bushels: 123, 51, 195, 30, 136.

It is difficult to determine to what extent the existing duties on wheat are effective. Since the 1924 crop came on the market, there has been a period of only a year and a half when the price of No. 1 Northern Spring wheat in Minneapolis has been above the price of Northern Spring in Winnipeg. For the whole period, the prices of these two grades have averaged about the same in the two markets. In the period from 1913 to 1917, when only a 10-cent duty was in force, the Minneapolis price for the same No. 1 grade averaged by years from 2 to 7 cents higher than the same No. 1 Winnipeg grade. Undoubtedly the Winnipeg grade represents a higher quality of wheat. One can say with some assurance that the present tariff has had no more effect since 1924 on the price than the 10-cent tariff did in the 1913 to 1917 period, and the effect of the 10-cent tariff could not have been more than 10 cents and probably was no more than 5 cents. Production of spring wheat has ranged from 250,000,000 to around 300,000,000 bushels in recent years. An effective duty of 5 cents on this amount would equal $15,000,000 additional gross income to spring-wheat growers. The price of hard winter wheat may have been affected slightly in 1925, but certainly has not been affected the rest of the time. In the period from 1921 to 1924 the spring-wheat crops in the United States were short and the duty was effective for about 20 cents per bushel. Any year in the future when these conditions are duplicated, the duty may be effective fully as much on spring wheat, and to some extent on hard winter wheat if the Kansas crop is short at the same time. The tariff duty has, no doubt, added more to the price of the high-protein wheat than to that of the ordinary grades.

The duty is also a disturbing factor in the cash market. It has a way of going on and off at short intervals according to the immediate demands of the millers.

Other Grains.—The possibilities with respect to expanding grain production generally by raising duties are very limited. If it were thought best to make the poultrymen and dairymen in the Atlantic and Pacific states pay the extra price resulting, the present imports of ordinarily less than a million bushels of corn could be stopped. This would add little if anything to the price of corn in the Corn Belt. Getting even 10,000,000 bushels of corn disposed of in New England and California in place of in Europe as corn, pork, and lard would affect Corn Belt corn prices very little. It must be remembered that the corn shut out of the United States competes with us in Europe, instead. The rye crop has been altogether on an export basis since the World War. The United States is upon a net exporting basis for oats, but in certain years when the oat crop has been short in our eastern states, as in 1923 and 1924, as high as 4,000,000 and 3,000,000 bushels have paid the duty of 15 cents a pound. In other years, the imports have rarely exceeded 200,000 bushels. Further duties might check the imports of the short years, but would penalize eastern farmers severely. The price of oats in the principal oat-growing sections is little if any affected by this local importation. Our exports, averaging around 18,000,000 bushels per year, are about half in the form of oatmeal. We import about 30,000 bushels of barley a year and export about that many million bushels. Our imports of rice, mostly from Japan, valued at about $9,000,000 per year, are explained partly by differences in types of rice, but mostly by the fact that parts of the United States are a long way from the rice-growing sections. Counting shipments to Alaska and our other possessions, the United States is upon a net export basis by nearly 20,000,000 bushels per year. Further duties would check the present imports largely and perhaps give the California rice industry a chance to expand a little. Price effects would be entirely local. Buckwheat enters very little into the foreign trade of the United States, our imports being less than 2 per cent of the domestic production, and our exports still less in most years. The duty of 10 cents per hundredweight mostly affects local movements between Canada and the United States in the East. Higher duties could check them altogether if it were deemed desirable.

Hay.—The hay duty of $4 per ton since 1922 has undoubtedly curtailed imports from Canada to our eastern deficit areas; but, in spite of the tariff, imports have averaged 150,000 tons a year since 1922. Raising the duty would check these imports almost altogether, but the bill would be paid mostly by dairymen in deficit areas who are now becoming the largest users of commercial hay.

Vegetables.—The present duty of $0.50 per bushel on potatoes principally checks importations from Canada, especially in years of short crop in the United States. Imports have averaged a little over 3,000,000 bushels per year since 1922, and have ranged from less than 500,000 to over 6,000,000 bushels. Some of the imports are of early potatoes and seed potatoes. The duty is fully effective in eastern markets and to a lesser extent in markets in other producing centers in years of the short crop; and still higher duties could be applied if the only consideration was higher prices in such years to the producers. Potatoes have a very unstable price, because of a relatively inelastic demand. Short crops already sell at a price which nets the grower much more than a large crop, and further tariff duties would accentuate this difference. The present duty may add over $50,000,000 a year to the income of potato growers in short years. It adds an appreciable amount to the seed bills of the southern potato growers.

The imports of onions from Spain and Egypt mostly, valued at around $2,000,000 for the last 2 years, are largely of different types from the domestic onions. That they are to a limited extent competitive is indicated by the fact that they come in in spite of a duty of 1 cent per pound. A higher duty would check these imports somewhat, by reducing consumption a little, by causing some substitutions of the milder of the domestic types, and also probably by stimulating efforts to grow the Spanish type of onions in the Southwest.

The tomato tariff of 0.5 cent per pound affects imports from the west coast of Mexico at the very beginning of the season. A higher duty would stimulate greenhouse production in the United States and also production on our farthest Southwest. The imports for the past two years have been valued around $4,000,000.

The other vegetables imported in appreciable quantity are beans and peas. Both are covered by sizable duties. The imports are mostly of different types than the domestic, and higher duties would have only minor effects on production.

Fruits.—The fruits whose production would be stimulated by higher duties within reason are lemons, grapefruit, cherries, and grapes, with imports in 1927 totaling something over $4,000,000. All are protected by liberal duties at present; higher duties would have some effect in a few cases. The duty on lemons is already seven-eighths of their import value. Additional duties on the more tropical fruits—figs, pineapples, olives—would stimulate some additional production; but the extra burden on consumers would probably be out of all proportion to the effect on production.

Nuts.—Our imports in 1927 of competing types of nuts—almonds and English walnuts, pecans and peanuts—were valued at around $19,000,000, mostly walnuts and almonds. The nuts imported are largely of non-domestic types, but higher tariffs would check the imports considerably. The imports of peanuts, classified in this group in the trade statistics, valued at $2,000,000 per year, compete only with a type produced in Virginia. Higher duties on these products would add principally to consumer's costs.

Summary.—It should be clear from the foregoing discussion that determining the exact effect of present and potential duties on any commodity is beyond the power of human intelligence. Protective duties have a way of developing unexpected results. Improvements in production may completely overturn predictions. Nevertheless, we must arrive at judgments in such matters. Every time a new tariff schedule is made, decisions of this kind have to be rendered.

TABLE 31.—ESTIMATES OF EFFECT OF PRESENT AND POSSIBLE FURTHER DUTIES ON AGRICULTURAL PRODUCTS

(In Millions of Dollars)

	Present agricultural duties	Additional agricultural duties within reason
Additional production of protected commodities	?	210
Amount added to farm values of protected products	560	275
Amount added to retail values of protected products purchased by:		
Farmers	260	160
City families	540	400
Total	800	560

Now comes the task of summarizing the foregoing discussion. This has been done by taking each of the commodities and setting down opposite it an estimate on each of the four points covered in Table 31 and then adding up the estimates. The amounts set down have been determined with all the objectivity of which the author is capable and after taking into account whatever facts have been made available by the United States Department of Agriculture, United States Tariff Commission, and other agencies concerned. The totals have a smaller percentage of error than the individual estimates, because those that are too high have probably been offset by others that are too low. Even at that, the totals may be as much as one-third too high or too low. They should not be quoted as exact figures. For example, the $210,000,000 for additional production of protected commodities would be more properly stated as around $200,000,000, possibly as low as $150,000,000 or as high as $250,000,000.

Higher duties on a commodity tend to have two sorts of effects, one to increase the volume of their production and the other to raise their prices. If one is not careful, the effects of these two may be estimated in such a way as to count some of them double. If the higher price is multiplied into the new volume of production, then the increase in production must be figured in terms of the old price. This is the procedure followed in the table. The other method might have been to figure the new production at the new price and apply the higher price only to the old production.

The amount added to the production of the protected commodities cannot be taken as an increase to that extent in total agricultural production, since a considerable amount of it will simply take the place of present exports. Thus, the duty on flaxseed will cause flaxseed to be grown in place of spring wheat for export, and the duty on beef will cause less pork and lard to be exported. A considerable part of it, however, possibly as much as one-half, will be additional product as a result of taking more land into crops and feeding more crops to livestock and cultivating crops more intensively.

It should be made clear at this point, also, that whatever is added to the total volume of agricultural production will by no means be all profits. Not only will all of the usual expenses of production have to come out of it, but probably relatively higher expenses of production. Whenever a higher price stimulates new production of a commodity, it is likely to induce this under conditions which would not have returned a profit before, and hence by no means all of the higher price is profits.

Some of the additional production will be on new farms brought into existence on poorer land and will add nothing to the income of the existing farm families. This will be of value to a nation only to the extent that it is desirable to have more farm families.

The duties assumed in making these estimates are those which will add most to the prices received by producers, except in the case of hides, wool, and sugar and a few other commodities, for which rates this high would clearly be considered unreasonable. On many of the commodities, the rates which were assumed would be virtually prohibitive, but it was realized that a prohibitive rate on others would cause exportable surpluses and low prices some of the time. This analysis was made before the farm organizations presented their briefs to the Ways and Means Committee of the House, but the rates assumed are on about the same level, higher on wool and cotton, and a trifle lower on hides, pork, dairy products, and a few others. The additional rates that are included in the briefs of the farm organizations would not raise prices further except on one or two commodities.

The list of commodities also fails to include jute, bananas, and a few others not produced in this country which the farm organizations included, on the assumption that if import of these could be stopped, more cotton, apples, oranges, and other domestic products would be consumed. Neither is any provision made for excluding imports from the Philippines, as the farm organizations have requested. Both of these proposals will be briefly mentioned later.

If tariff duties were changed as above stated, our imports of competitive farm products, taking the imports of 1928 as a basis, would be reduced from $825,000,000 to $615,000,000, and would represent a little more than 4 per cent instead of 6 per cent of our domestic production of farm products. As our population grows and consumption increases, the domestic production of some of these would increase behind the tariff wall, so that the $210,000,000 would grow; but the $615,000,000 would grow as fast, or perhaps faster. For example, our imports of sugar have been increasing at the rate of about $7,000,000 a year. The same increase will occur for many of the import types of hides, tobacco, fruits, and nuts.

No estimate is given of the effect of the present duties on volume of agricultural production. It is impossible for anyone to say how much sugar or wool or beef or flaxseed we would now be producing if these commodities were not protected by duties. Much of the land now being used by whatever additional production of these and other agricultural commodities is stimulated by the duties would be devoted to other agricultural uses instead, and we would be exporting more wheat, pork, cotton and other products.

The estimate of $560,000,000 as to the amount added to farm values of protected products must be understood as follows: Taking other things as they have been, if the present duties had not been imposed on these products, the prices of them, considered one at a time, would have been enough lower so that the farmers would have received this much less from their sales of them. As is apparent from the above discussion by individual commodities, the estimates were obtained by comparing prices for comparable grades in this and in foreign countries before and after the duties were imposed. The general price level for farm products has changed while the duties have been imposed, and the estimates are all relative to the price level at the time. A similar interpretation must be given to the $275,000,000 estimated for the effect of the additional duties.

The amount added to the retail values of protected products is larger than the amount added to farm receipts for two reasons. First, it applies to the product imported as well as to that produced at home. Second, allowance must be made for the multiplying of the duty in the hands of the various middlemen between the importer and wholesale receiver and the consumer. With some commodities, such as butter, the allowance made for this is very small, but in the case of clothing, it must be very large. The separation between farm and city consumption must necessarily be very rough. It is based on the best available data as to per-capita consumption in city and country where these have been worked out separately. In the case of farm consumption, it includes the effect both on goods consumed by the family and on goods, such as hay, used in farm production. The duty on sugar undoubtedly adds more to the cost of living of all the farmers in the United States than it adds to the income of the sugar producers. The same would probably be true of the duty on hides and may be true of the duty on flaxseed.

In estimating the effect of agricultural duties on net receipts of agriculture, one must reckon not only on the $260,000,000 and $160,000,000 given in the table, but on the higher costs of production resulting from the higher wages, rents, and certain other costs that tend to develop rather quickly in the areas where production is expanding. The higher land costs are, of course, realized as gains in rents and land values by the owners of the land, who are still the farmers themselves on a majority of farms. Before very long, also, the prices of some of the things that farmers buy from cities begin to reflect the higher costs of living and manufacturing and doing business in the city. Apparently, they would be felt most in the United States at present in higher middlemen's margins, already unconscionably high principally because of the high levels of wages and rents. The net gain to agriculture from higher prices would, therefore, be less than the $275,000,000 not only by the $160,000,000 of higher costs of products of farm origin, but by an uncertain amount due to other causes.

What is left would equal not over $15 per farm, which is nearer 1 than 2 per cent of the average net farm income properly expressed. The effect of the existing agricultural duties analyzed in the same way would be not over $40 per farm.

There can be little doubt that the imposition of the additional duties necessary to cut out $210,000,000 of present imports of farm products would introduce a great deal of additional instability. Prices of potatoes, beef, lemons, and several other products would rise to very high levels for short periods if tariff duties were made high enough to keep out all imports. Prices of others would be made unstable by further tariff duties because their volume is close to domestic consumption, so that we may have either an import or an export balance or the threat of one occasionally. Such a description fits beef and veal, mutton, butter, eggs, oranges, and even flaxseed.

There is, of course, another theory as to how a tariff wall may help to stabilize prices—namely, that it may enable the producers to organize some system of control of production behind it, and perhaps even exact a monopoly price. Probably, some of our domestic industries have at times and in a measure accomplished this. Possibly, a few of our agricultural producer groups might realize such a goal in time. But if it is to work in agriculture, some way must be found to control the weather or else to reduce the cost of carrying from one year to the next. In the meantime, the exchange of annual weather surpluses between countries is a useful aid to stabilization, if stabilization is desired.

In conclusion, we may say that additional tariffs still within reason, although so high as to be almost completely prohibitive, might add 2 per cent to the farm values of the protected products and 1 per cent to the average net farm incomes. But in so doing, they would make prices of these farm products more unstable than they are at present.

The discussion of agricultural duties is not complete without mention of several other aspects of the problem. First is our relations with Canada. Imposing the duties above assumed would injure Canadian agriculture much more than it would help our agriculture, because Canadian farmers have fewer alternative farm products, because Canadian agriculture is so much smaller, and because the United States is the natural outlet for many Canadian farm products, as Central America is for many of ours. It is greatly to be doubted whether what our agriculture would gain from excluding Canadian farm products almost entirely is worth the ill will that would be aroused by it. The Canadians have means at their disposal for reprisals that even the farmers of the United States will not like, to say nothing of the industrial and commercial East.

Imposing a small duty on bananas is warranted as a means of raising revenue. The imports amounted to $35,591,000 in 1928. Only a high duty would check domestic consumption greatly, because at double the present price they would still be a relatively cheap source of food values in fruit. If consumption were checked, prices of domestic fruits would be raised very little in consequence; we would simply produce more of them at eventually the same price. This is because we have an abundance of land and capital seeking a chance to be so used. But we would have more land in fruit crops. Our national relations with the Central American states also have an important bearing on the problem. Finally, there is the whole question of the wisdom of extending the practice of protection to indirectly or remotely competitive products. Silk and rubber would be next in line for such treatment.

The jute proposal is of the same nature. Imports of it were $90,067,308 in 1927. It is claimed that a duty of 3 cents a pound on raw jute, 10 cents a pound on burlap, and similar duties on other manufactured commodities of jute, would cause 500,000 to 1,500,000 bales of cotton to be used instead. If this duty achieved this result, it would add from $8,000,000 to $12,000,000 to the cost of wrapping material and sacks in the United States, of which probably one-half would bear on agriculture direct. The extra demand for cotton would be met in a year or two by larger production at practically the same price, so that the net effect would be principally 3,500,000 more acres of cotton and a $80,000,000 larger gross cotton income. The cotton growers would themselves be using more expensive wrapping for their cotton bales. Those who have argued for such a tariff have been thinking in terms of the disposal of a large crop already produced, not in terms of the effect on the situation in succeeding years.

The situation does not seem to be such that we can cast off the Philippine Islands at this time; and, unless we wish to do so, we must expect to give them preferential trade relations. The same statement applies to Cuba and Porto Rico. This is our only important hold upon the peoples of these islands.

THE EFFECTS OF DUTIES ON MANUFACTURED PRODUCTS

Proponents of tariff revision as a means of aid to agriculture have argued in favor of revision of the manufactures schedule both upward and downward. Those who have urged revision upward believe that this will raise prices of farm products by providing a stronger home demand for the raw materials from agriculture used in manufacturing and by providing a larger manufacturing population to consume the food and textiles produced on farms. Those who have urged revision downward have believed that this would lower the prices which farmers pay for the commodities which they buy.

Possibilities along either of these lines are somewhat restricted by circumstances with respect to our import-export balance in manufactured products. Our imports in 1927 of manufactured goods (not including semimanufactures and manufactured foodstuffs) were only $984,000,000 as contrasted with $1,637,000,000 in the same year for strictly farm products as given in Table 32.[3] These imports are only 3 per cent of the value of manufactures in the United States in 1925, including whatever double counting there may be. The comparable figure for agriculture is 11 per cent. The duties collected on manufactures were $209,000,000 as contrasted with $273,000,000 for the four agricultural groups of materials. The percentages which duties collected are of values of imports are around 40 per cent

TABLE 32.—DOMESTIC PRODUCTION, IMPORTS, EQUIVALENT AD VALOREM RATE AND EXPORTS OF SELECTED GROUPS OF COMMODITIES

	Domestic production 1925, million dollars	Imports 1927, million dollars	Equivalent ad valorem rate, per cent	Exports 1927, million dollars
Manufactures *	32,551	984	21.2	1,535
Agricultural products †	17,086	1,637	6.3	576
Manufactured foodstuffs ‡	10,419	451	37.6	463
Other raw materials §		666	4.2	474
Unclassified	8,585	435	15.3	2,173

* Includes textiles, iron and steel, machinery and vehicles, manufactures of wood and paper. Tobacco, leather and furs and rubber, chemical and related products.

† Includes the following Department of Commerce classifications: animal and animal products less leather and fur manufactures; vegetable-food products and beverages, edible; and vegetable-food products, inedible, less rubber and manufactures.

‡ Manufactured food products as classified by Department of Commerce.

§ Includes wood and cork and rubber unmanufactured; and metals and manufactures, except machinery and vehicles, less iron and steel manufactures. Domestic production of these materials was not estimated.

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[3] Table *I* in the Appendix presents these data in more detail. The classification in this table differs somewhat from that in Table 32.

for both manufactures and agricultural products, if sugar, wool, and tobacco are included with agricultural products. If sugar, wool, and tobacco are excluded, the percentage is only 22.3 for the rest of the agricultural products. The degree of prohibitiveness of the duties is more to be judged by the ratio of duties collected to all imports, both free and dutiable, which is 21.2 for manufactures and only 13.1 for agricultural products. If wood manufactures (mostly paper pulp) are omitted from the manufactures group, the ratio is 35.5. This last comparison is the one which most nearly describes the situation. The manufactures duties largely prevent imports; the agricultural duties only to a degree. The reason for this is that comparative advantage in manufacturing is largely a matter of labor supply and capital, which can be offset by duties, whereas no duty within reason will make it feasible to grow coffee and bananas in the United States.

How completely exclusive the present manufacturing schedule is becomes even more evident when it is examined more closely. Exclude wood manufactures and fertilizers, and the free list includes only $95,000,000 of imports, in which farm machinery and harnesses, which only farmers buy, are important items. There certainly is not much room left in this list for extending protection to more manufactured articles without encroaching on the purchasing power of agriculture. It includes boots and shoes, whose imports were $5,000,000 in 1927.

If manufacturing production is to be increased, it will therefore have to come mostly by raising duties on present products. Let us turn to the imports of dutiable manufactured goods, amounting to $519,000,000. The 78 per cent duty on aluminum ware seems to be about all that the American aluminum monopoly ought to be allowed to extort from the consumers. Most of the imports are of textiles, on which present duties averaged 43.4 per cent of the dutiable imports in 1927. The range is from 13 per cent on cotton cloth to 73 per cent for cloth mittens and gloves. It is 72 per cent on woolen goods and 61 per cent on clothing. The 72 per cent for woolen goods is in addition to the compensatory duty on the raw wool. The duties are nearly as high on many articles of hardware.[4] All these could be increased, it is true. But what would agriculture gain from it? Suppose $200,000,000 was cut from our imports of textiles. The wage bill of the factories would be increased $55,000,000 and 55,000 more workers would be given employment. They would spend about $28,000,000 on food and clothing, of which around $10,000,000 would reach farms as payment for farm products. The mills would pay $55,000,000 for additional cotton and wool used, of which $40,000,000 would reach farms somewhere, not all in the United States. Much of the same food and textiles is being produced and sold now, but for export to mills and textile workers abroad. How much more would our farmers get? and how much of it would be net gain? It would be safe to say that the extra cost of a single garment because of the higher duties might more than equal what would be added to the average annual net farm income.

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[4] See Table *J* in Appendix for data on a representative list of commodities.

It is rather futile to discuss what farm people might gain from lower prices on aluminum ware, carpets, clothing, tableware, hardware, machine tools, paints and varnishes, soap, wire, etc. It simply is not being done these days. Nevertheless, a considerable portion of our population—probably as much as three-eighths of it—is so old-fashioned as to be willing to see it tried. Not suddenly and drastically of course—but a little bit at a time, so as to give manufacturers time to adjust themselves to it. If it could be done in this way, there is little doubt in the minds of economists that the farm population would gain more from the lower prices of some of its purchases than it would lose from any effects on the home market. There would be no actual decline in the home market. There would simply be a slackening in the rate of its growth, which may seem objectionable from the standpoint of the manufacturers themselves, but is all in the world that people can mean when they talk about checking the urbanization of the country and stimulating agriculture instead of manufacturing for a while.

For the present, the best that the agricultural interests can expect is that the purchasing power of their incomes will not be decreased further by still higher duties on manufactured products.

A LUMBER TARIFF

One group in the manufactures list is deserving of special discussion both in itself and because it illustrates the efforts constantly being made to impose duties on supplies used in agriculture. Eight years ago this effort was illustrated by the attempt to secure tariff protection on the infant potash-fertilizer industry that had sprung up during the World War. The American Farm Bureau Federation fought this proposal by showing how it would add only a few thousand dollars to the income of our potash producers and hundreds of thousands to the expenses of our farmers. L. J. Taber, Master of the National Grange, stated in the recent hearings on tariff rates that the farmers of the United States use annually about 15,000,000,000 feet of lumber—45 per cent of the national consumption. The Commission of Agricultural Inquiry published a similar estimate. At $40 per thousand, this would make $600,000,000 the annual lumber bill of the farmers of the United States. The proposed duty is 25 per cent *ad valorem.*

To what extent such a duty would be effective is difficult to estimate. There is at present a duty of $1 per thousand board feet on logs of spruce, cedar, and Western hemlock, 10 per cent *ad valorem* on cabinet woods, and 33 1/3 per cent *ad valorem* on furniture made of wood. The imports of lumber into the United States in 1927 were 1,637,785,000 feet, equal to 5 per cent of our total production. Most of this came from Canada. The total duties collected on other than cabinet timber were only $234,674, and $134,217 of this was on logs of cedar, spruce, fir, and hemlock. Apparently, around 120,044,000 feet of other than cabinet timber entered the United States free of duty in 1927. Our exports are more than our imports, and our lumbermen are successfully meeting Canadian competition abroad.

The effect of the proposed duty would be principally to shut out a large part of the Canadian imports and raise the prices of lumber in those consuming centers in the United States which are now nearer to Canadian sources of supply than to domestic sources of supply. It would penalize farmers and others living in sections now obtaining lumber from Canadian sources because these are nearer. It would have little or no effect on the prices of lumber in other parts of the United States. Mills in other sections would find a slightly larger market in certain states near the Canadian border; but this would raise their prices very little. The malady of our lumber industry is overproduction. In spite of the prospect of a period when our virgin timber supply will be largely exhausted, most of the time more mills are operating and more lumber is being sawed than can find a ready market. Enlarging the market 2 or 3 per cent by shutting out most of the Canadian timber would mostly permit a slightly larger production at virtually the same prices, except in the sections now obtaining their timber from Canada.

The pecuniary gain to the lumber industry would be slight indeed, and might well be offset by effects of another nature. Some of the lumbermen are favoring the proposed duty and some are opposing it. It would probably cost the lumber users of the United States $5,000,000 to $10,000,000 a year, of which the larger part would be received by the railway companies in longer freight hauls. From the standpoint of national policy, it would hasten somewhat the rate of exhaustion of our virgin timber, and make lumber appreciably dearer 50 years hence than if we continue to supplement our own supply with the Canadian.

The effect on the Canadian lumber industry would be rather severe, since exports to the United States represent nearly half of the total production. This is just another example of how a large country can injure a small one at little or no advantage to itself.

METHOD OF DETERMINING TARIFF RATES

This is another subject upon which there is a great deal of confusion. Let us briefly consider two methods that could be followed:

1. **The Actual Method.**—This consists of the holding of hearings before the Ways and Means and Finance Committees of Congress at which the producers of the various commodities ask for import duties at about double the rates which they expect to get so as to have something to trade with in their compromises with other interests. Following the hearings, negotiations are

carried on in private and in secret sessions of the two committees, at which compromise rates are agreed upon. In the public presentations before the Committees, figures are usually presented showing differences in the cost of production at home and abroad. This is because the producers must have something to present in the nature of an argument and supporting data, and also because Congress has set the style for it. Little if any attention is paid to these cost data in the actual negotiations of the rates.

When Congress is not active on the subject, then the Tariff Commission and the President make the rates. The Tariff Commission has a limited budget and is able to make only part of the investigations which are requested following complaints of imports. When it does make an investigation, it undertakes to get a cost of production figure in the principal producing areas of the United States and of the foreign countries which are most nearly in competition with us in our markets. Some foreign countries will not let the representatives of the United States Tariff Commission conduct such studies within their boundaries. Those which do may send out warnings to their farmers as to how the data are to be used. If the Tariff Commission is unable to get foreign cost data, it uses invoice prices of imports and transportation costs instead. If it obtains cost figures, it assembles them in all possible ways, with rents or land charges included and without; with transportation costs included and without; with land charges on a cash-rent basis, or as a percentage of the current sale value of the land; on the basis of 1 or 2 or 3 more years of crop yields, etc. The high-protectionist members of the Tariff Commission incline to the ways of figuring the costs which give the largest differences between countries. Moderate protectionists or low tariff members of the Commission incline to the methods which give the lowest differences in costs between countries. If the former group is in the majority, as at present, the recommendation which goes to the President is in terms of large differences in costs, and the other members of the Commission may make a minority report in terms of the low differences in cost. The President in a Republican administration is very likely to decide in favor of the methods of figuring which come nearest to justifying a 50 per cent increase in the duty, which is the maximum which the law allows at one time. The difference in costs of production between countries is supposed to be only one of the factors which is to be taken into account, but, as a matter of fact, the other factors have been largely ignored, except in the case of sugar, where they were used to justify accepting the minority report favoring no reduction in the duty.

2. **A Proposed Method.**—Have Congress decide the policy of the country with respect to production and consumption of each product; for example, have Congress determine whether the United States is to produce all of its own flaxseed, with absolutely no importations, or instead only enough so as to keep safely this side of an export surplus so that the tariff will always be effective, or, instead, some fraction of the domestic consumption, such as 60, 70, 80 per cent, etc. Then delegate to the Tariff Commission the task of determining the import duty, using the best-known scientific methods which will attain the ends which Congress names. It will not be possible for the Tariff Commission to determine such rates with any certainty that they will work exactly as intended. Fluctuations in the yield from year to year will affect the results. But proceeding by the method of trial and error, the Commission should presently be able to determine upon a rate which has the desired results. Changing economic conditions and technical improvements in production may make it necessary to change the rates occasionally. Accordingly, the Commission will need to be on the job all of the time.

The author believes that this second method is the right one. It represents the division of duties between the legislative branch of the government and the executive which is now coming to be recognized in government. The task of railway rate making is now divided in this way between Congress and the Interstate Commerce Commission. Matters of national policy in production should not be determined by commissions. Difficult tasks involving scientific determination should not be expected of Congress, but referred to commissions with trained specialists on their staffs. The time is surely coming when this principle of separation between legislative and executive will be extended to tariff rate making. It is important for all concerned to appreciate this thoroughly, and drive consistently in that direction.

If this procedure were adopted, the debates in Congress and the hearings before the committees would be at once placed upon a much higher level. The wool problem would be discussed from the standpoint of the importance of sheep raising as a form of livestock production for conserving the soil resources; from the standpoint of its effect on future developments in agriculture in the semiarid regions, and the relation of this to a national land utilization policy; and from the standpoint of the importance of a supply of wool in case of war, as balanced against the effect of the duties on the cost of a family budget and on the revenues of the government. The decision would probably be in favor of production equal to a certain percentage of domestic consumption; but it might be more specific in terms of production in certain areas. The decision with respect to sugar production would need to be on a somewhat similar basis. With respect to dairy products, the decision would indicate to what extent imports were to be excluded according to types of products and seasons of the year. With corn, it would relate to the question whether poultrymen and dairymen in the East and West should be compelled to buy their corn in our Corn Belt. The Tariff Commission would, of course, have for part of its work the supplying of Congress with the information needed to determine the best national policy with respect to each of the products.

The scientific methodology which the Tariff Commission would employ in determining what rates would attain the desired ends would consist of an analysis of past production and consumption, import and exports, prices and import duties, and of the relation between these. It particularly would involve determining the relation between prices and subsequent production as outlined in Chap. IV.

If we continue to make tariffs according to present methods, it is important that some changes be made in the part of the act which relates to the flexible provisions. Most of all, the Commission should be given more latitude as to the methods to be employed and the bases which determine the proper duties. Congress should never tie the hands of a commission of experts which it employs by prescribing the scientific methods which it shall follow. Even under present statutes, the Tariff Commission could make much more use of price analysis as a basis of tariff rate making than it does. It has been tending in that direction recently, partly as a result of the hostile attitude of foreign governments toward cost studies. The Tariff Act should be amended so as not to make cost of production studies seem mandatory upon the Tariff Commission. In the first place, such studies are not necessary as a basis for determining rates upon a majority of products. Information of the sort presented in the early part of this chapter, but worked out in much more detail, is commonly all that is needed. In fact, as is made clear above, it is all that is really used in most cases. When the cost data are gotten up in such a way as to permit the President to choose the kind of a tariff rate from them that seems most politic at the time, one can hardly say that cost data are really being used as a basis for the rates. If the cost studies as made do not furnish a basis for making the changes which seem politic, they are likely to be in effect discarded or laid on the shelf until more satisfactory data can be found.

It should also be clear to the general public by this time that the data as to difference in costs of production between countries have very little scientific value. It is foolish to talk about them as furnishing a scientific basis for tariff rate making. If there are several ways of assembling the data, as above indicated, no one of which all economists would agree is right, then certainly no scientific answer can be given as to difference in costs. Even if all economists could agree as to which costs should be included and on what basis, there would still remain insolvable questions as to adjusting land charges between different grades and classes of land in the farm and between the different crops grown in rotation system; as to differentiating labor rates between proprietor, family, and hired labor, and between labor used on different crops at different seasons of the year, and between field labor and chore labor. The methods in actual use are largely arbitrary and the results are equally arbitrary.

If costs of production in competing countries could really be determined accurately, and land charges and transportation costs were included, the differences in costs would *largely* disappear between most countries, except as tariff duties are in force and effective and are supporting production on a higher cost basis in one of the countries. The producers which were nearest to market would be found to have higher land charges and lower transportation costs. Those operating on the poorer land would have land charges enough lower to offset the lower yields. In the countries where wages are higher, producers would be found using less of it and more machinery instead. There is in actual practice no such close adjustment between wages and rents and methods of production, quality of land, distance from market, as the foregoing statements would imply. There are always maladjustments in economic conditions, especially as between conditions in different countries, but except in unusual circumstances, such as the disturbed state of price levels and foreign exchange following the World War, costs of production in different countries are never far out of line with each other, if rents and costs of transportation are included, and allowance is made for existing tariff duties in the importing countries.

The reason that large differences in costs sometimes appear is mostly in the methods used. The wheat-cost study which the Tariff Commission made in the United States and Canada several years ago illustrates this very well. The various methods of working up the costs gave differences ranging up to 70 cents a bushel. The President accepted the method which gave a difference of 42 cents, since 45 cents was the highest figures to which the tariff could be raised at the time. If the cost analysis had been made on a basis which most economists would be likely to accept as soundest, the difference in costs would have been somewhere between 10 and 15 cents a bushel. The most important factor in the problem was differences in yields in the two countries. The United States had recently passed through a period when either drought or black-stem rust had made yields very low.[5] Crops had been much better in Canada during this period. If these abnormal circumstances were properly recognized, most of the difference in cost between the two countries would have disappeared. Another factor was land charges. The United States had just passed through a land boom and land values were declining from their high levels of 1919 and 1920. Western Canada had had its land boom several years earlier and land values were about at the bottom. Land values in the United States have since declined and yields have been much more nearly like those in Canada. If this new situation were inducted into the analysis, the results would be much different from those obtained in 1924. That this conclusion is sound is suggested by the record of imports of wheat from Canada since 1924. The tariff has been effective only 1 year.

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[5] See chart for wheat yields in Chap. IV.

The foregoing should not be taken as an argument for removing the duty on wheat. The supply of hard spring wheat in the United States is so short that in any year when weather is unfavorable, the tariff duty may make wheat prices higher in the United States than in Canada.

Summary.—Tariff duties on farm products in the United States can be raised somewhat further. By so doing, the gross income of the farmers of the United States may be increased as much as $30 per farm and the net income by as much as $15 per farm. If the duties are made too high, they will make prices of farm products erratic and may even reduce net incomes, as well as have some other undesirable effects. It would be desirable if our method of making tariff rate could be revised so that Congress would determine the national policy for each product and the Tariff Commission was given power to determine the rates that would make this policy effective. If this cannot be done, the Tariff Commission should be given more latitude in its methods under the flexible provisions. Agriculture has nothing to gain and something to lose from higher duties on manufactured products.

CHAPTER VIII

THE EQUALIZATION-FEE PLAN[1]

The plan for raising the prices of farm products by government action which Congress has favored for the past 2 years is commonly known as the McNary-Haugen or equalization-fee plan. This plan first appeared in print without the author's name, early in 1922, in a pamphlet called ''Equality for Agriculture.'' Three thousand copies of this pamphlet were distributed. A second edition appeared in October in the same year, addressed to President Howard of the American Farm Bureau Federation. This edition bears the names of George N. Peek and Hugh S. Johnson as authors. Peek had not long before been put in charge of the fortunes of the sorely distressed Moline Plow Company of Moline, Illinois. Johnson was an attorney for the same company.

The essential idea of the plan as presented in these first pamphlets was exactly as it is now. The surplus above domestic consumption was to be sold in the export market at world prices, and the losses recouped by ''a differential loan assessment on each pound or bushel when and as sold by the farmer.'' This was to be a way of ''securing equality for agriculture in the benefits of the protective tariff.'' Peek had the idea that ''the fair exchange value of the crop is reduced in exact proportion with the protection afforded industry. . . .'' ''Either agriculture must die, or a way must be found so to revise protection as to insure agriculture a fair exchange value for its crops. . . . Free trade is unthinkable.'' The other conspicuous feature of the plan then presented was the definition of ''fair exchange value'' of any crop as ''one which bears the same ratio to the current general price index as a 10-year, prewar average crop price bears to the average general price index, for the same period.'' This was supposed to give a price for the crop equal to ''cost of production plus a profit.'' That the amount of the import duty upon the crop was what would determine domestic prices under this scheme, was not fully appreciated at this time. The assessment on the producers was to be made by paying them part of the price for their grain in the form of ''scrip,'' the redeemable value of which would be announced later when operating costs and losses had been determined.

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[1] Acknowledgment is hereby given to the *American Economic Review* for permission to republish much of this chapter.

Peek presented his plan to Secretary Wallace's National Agricultural Conference in January of 1922, and probably had a hand in its strong recommendations relative to receiving a ''fair exchange value'' for farm products. But he was not satisfied with this general statement. He remained behind and urged his plan upon Secretary Wallace and even upon President Harding. Secretary Wallace was sufficiently impressed to call together a group of representative men to consider it. In that group of fourteen men were Julius Barnes, Otto Kahn, Rufus Dawes, Thomas Wilson (Wilson & Company, Chicago), Fred Wells (Peavy Grain Company, Minneapolis), and J. R. Howard and Gray Silver of the American Farm Bureau Federation, besides Peek, Johnson, Secretary Wallace and Dr. H. C. Taylor, Chief of the Bureau of Agricultural Economics. Barnes was greatly annoyed with Secretary Wallace for calling the conference. Kahn was more kindly disposed, but urged waiting 6 months to see if price relations did not improve.

No further action was taken with respect to the proposal, but Secretary Wallace kept thinking more and more kindly of it. His report to the President on ''The Wheat Situation,'' in November, 1923, contains a virtual endorsement of the plan (p. 24). In October, 1923, he sent Dr. Taylor out through the Northwest to study the situation at first hand. Shortly before, the state convention of the North Dakota bankers had endorsed the Peek plan and sent a delegation to Washington to present it. Secretary Wallace had tentatively approved it; Eugene Meyer had opposed it. Dr. Taylor found it the subject of discussion in every group of farmers with whom he met. So did Eugene Meyer and Frank Mondell, whom President Coolidge shortly sent out through the same territory on a similar errand. On Nov. 12, Secretary Wallace gave out an interview to the

Associated Press in Chicago in which he publicly endorsed the plan. In the meantime, he had put Charles J. Brand, consulting specialist on his staff and formerly Chief of the Bureau of Markets, at the task of drafting a bill embodying the Peek plan. Brand went out to Illinois to obtain Peek's help with it. What Brand prepared was whipped into final shape in the bill-drafting department of Congress, introduced on Jan. 16, 1924, as the first McNary-Haugen bill, and rejected the following June. This bill contained all the features of the original Peek plan, the price-ratio provision for determining fair prices, the provision for selling the surplus abroad at a loss, the equalization fee, and even the scrip device for collecting the fee. The provisions were to apply to eight ''basic agricultural commodities.''[2] The vote followed geographic rather than party lines, the West and Corn Belt favoring it, and the East and South opposing it.

The McNary-Haugen bill of 1925 was reported favorably by both committees, but did not escape from the legislative jam at the close of the Sixty-eighth Congress. In form, it was somewhat simplified from the original. It dropped the so-called ''ratio-price'' feature of the original bill, adopting instead the frank policy of making existing tariff duties effective in domestic prices. The provision for the use of scrip as the means of collecting the equalization fee also was dropped. The important changes came with the 1926 bill. The agitation for a cooperative-marketing plan was having its effect. Congressman Dickinson introduced a bill similar to the others, but providing for the actual handling of the surplus by cooperatives whenever possible. The large cotton crop of 1926 aroused the cotton cooperatives to an interest in this feature of the plan. Handling only about 10 per cent of the crop, they knew that any holding which they might do would benefit non-members more than themselves and might easily wreck their organizations. Some system in which all the cotton growers must participate in the holding and share the gains and losses had come to have a strong appeal to them. At the conference at Memphis in March, 1926, the two groups joined forces and arranged to meet later in Washington for the purpose of drafting a bill after the Dickinson model. Before the bill was reported out of the House Committee on Agriculture

[2] Wheat, corn, cotton, wool, cattle, sheep, swine, and rice.

many important compromises were forced by congressmen who were uncertain as to how the equalization fee would be received at home. As the House Committee reported the bill, the equalization fee was not to apply to corn or cotton until 3 years after passage of the act, and not then unless authorized by Congress. The House vote on this bill was 167 to 212. This bill applied to cotton, wheat, corn, cattle and swine. It received only 16 more Southern votes than the first bill, and lost about an equal number in the East North Central and the Pacific sections. The Senate vote on June 24 showed even less Southern support.

In interpreting this 1926 vote, one must realize that there had been a national election in which the administration forces had won an overwhelming victory. Equaling the 1924 vote was therefore a single achievement.

The new bill presented in 1927 differed from the preceding principally in providing for an equalization fee for cotton at once, which was, however, to be used in accumulating funds with which to finance the holding of large crops of cotton; in omitting cattle from the list of commodities and adding tobacco and rice; in making the operation of the plan dependent upon a vote in favor of it by representatives of one-half of the product; by providing for an advisory commodity council for each of the commodities; and by providing for loans to cooperatives for purchase and construction of storage facilities. The provision making the operation of the plan dependent upon a vote by representatives of half of the product was one of the compromises forced into the bill against the wishes of its farm-organization backers, who felt that this referendum was too cumbersome for easy administration. This amendment was adopted upon the insistence of Senator Simmons of North Carolina. About 40 of the House votes gained were in the South, and 10 were in the Corn Belt and the Pacific coast. Virtually all of the eight new votes in the Senate were from the South. The House accepted the Senate bill without a single amendment, although some were sorely needed.

The veto message of February, 1927, was a congeries of adverse opinions and objections from several different sources thrown together without definite sequence and with much repetition of points. The proponents of the plan met it in two ways: by preparing a careful analysis of it, and by meeting as many of its objections as possible, without sacrificing the essential equalization-fee principle, in their revised version of the bill. The 1928 bill was a better document from legislative and administrative standpoints than its predecessor. The searching criticism of the veto message strengthened it.

The outstanding feature of the 1928 congressional action was the increase in the number not voting, 8 senators and 66 representatives swinging into this column. As a result of this, mostly, the negative vote in the Senate fell from 39 to 23. There was an actual gain of 6 yeas in the Senate. In the House, the negative vote fell from 178 to 121, and the affirmative vote only from 214 to 204. The new affirmative votes in the Senate came mostly from New York, Ohio, Michigan, Wisconsin, and the East South Central states. In the House, the large decreases in the negative votes were in New York, Illinois, Michigan, Arkansas, and Texas. The South Atlantic states in both House and Senate swung a little more toward the bill.

The vote in the Senate, on May 25, on overriding the veto was 50 to 31, which means that only 3 yeas were changed to nays; but 8 of those not voting before now turned in nays. Had a vote been taken in the House, there would, no doubt, have been a similar shifting from the not voting to the nays column.

IS THE PLAN PRICE FIXING?

The outstanding issue between Congress and the executive branch of the government was whether or not the McNary-Haugen plan is price fixing. The procedure contemplated by the proponents of the measure, so far as wheat and other tariff-protected products are concerned, was to have the ''Federal Farm Marketing Board'' make contracts with exporters, processors, and middlemen to go out into the domestic market and buy at whatever price happened to prevail, and then sell in the foreign market at whatever price prevailed there, the board agreeing in such contracts to recoup them for the difference in price and pay the handling costs. It was intended that the board would contract for enough sales abroad to raise the domestic level by the amount of the tariff duty plus other costs of importation. Under such a procedure, the amount of the tariff duty would determine the amount of the increase in price. The McNary-Haugen bill could have been more specific than it was on this point; but not without playing up the tariff more than the Democrats in Congress would have liked. The veto messages avoided the subject of the tariff in this connection as if it were a secret rite, and with even better reasons. But the vagueness of the bill on this point gave the authors of the veto messages a chance to outline a plan of operation of their own—namely, have the board specify in its contracts the prices at which the commodities would be bought and sold. Note the following from the last message:

> The board would be compelled to arrive in some way at the premium on the domestic price which would be demanded from the consumer, and this figure would have to be fixed in the contracts which it would make with the millers, packers, canners, spinners, and other processors. Such prices and other terms fixed in the contracts would be used by the board to calculate the losses upon which it will base the size of the equalization fee. This procedure is the very essence of price fixing no matter how cumbersome and crudely camouflaged it may be.

Indeed, such a procedure would be price fixing; but it is not what the proponents of the measure had in mind. Nothing in the bill justifies the oft-repeated statement in both messages that the bill grants unlimited power to the board to fix prices "at will."[3] The maximum price under the equalization fee arrangement is fixed by the import duty set by Congress, and by the President under the flexible tariff, except as it may also vary with the amount of the equalization fee, which is determined by the size of the crop. The equalization plan is price fixing in exactly the same way that the tariff is price fixing.

As Sir Josiah Stamp expressed it, "The scheme is not a price-fixing one, for it merely creates an addition to a moving world price." It may be argued that whether prices are fixed absolutely or relative to a moving price is inconsequential—it is still price fixing; but if so, then import duties are price fixing.

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[3] Note the following: ". . . This act does by its terms, as it appears to me, and as claimed by its sponsors, commit to them absolute power to control, regulate, raise, and lower at will at all times, so long as they deem it advisable, the price which producers may obtain for their products, and all the people must pay or go without." (Attorney-General, Second Message.) "The present measure . . . carries no limitation as to the extent of pure inflation which it can undertake." (President's part of Second Message.)

OPERATION OF THE PLAN

The 1927 bill prescribed the equalization fee method only for commodities like wheat, rice, and tobacco, of which we have an exportable surplus, but not too large a one. For the others, it provided three alternative plans: (1) for cotton, to which the fee could not possibly be applied because no import duty existed, the method of financing the storage of the surplus of a large crop out of a fee, also called "an equalization fee," collected in the same manner as the equalization fee for wheat and rice; (2) for corn and swine, a method somewhere between that for cotton and for wheat, designed to stabilize production and smooth out the fluctuations of the corn-and-hog cycle, but raise prices very little, the import duties on these products being low; (3) on all other commodities, loans to cooperatives for storage, and application of the first method upon subsequent approval by Congress. The 1928 bill clarified the foregoing by stating that loans might be made to cooperatives for the purpose of assisting them:

> . . . in controlling any domestic regional or national, seasonal or year's total surplus of any agricultural commodity in excess of the requirements for orderly marketing or in excess of the domestic requirements of that commodity.

The 1928 bill thus clearly had in mind three types of surpluses; the temporary ones mostly due to favorable weather conditions, the season surpluses, and the generally prevailing exportable surpluses of certain crops. It provides for overplanting surpluses to only a limited extent.

In this chapter, we are interested only in the equalization fee aspects of the McNary-Haugen measure. Those features of it relating to weather and season surpluses, and the insurance provision, will be discussed in Part III.

The operation of the plan can best be explained in terms of specific commodities. Let us take wheat, cotton, and pork products as examples—wheat first. The factors which need to be taken into account are the following:

a. **Production Now.**—The crops for 1925, 1926, and 1927 were 676,000,000, 832,000,000 and 872,000,000 bushels, respectively.

b. **Exports Now.**—These were 108,000,000, 219,000,000, and 207,000,000 bushels, respectively, for the same 3 years, flour exports being included in terms of their wheat equivalent.

c. **Imports Now.**—The imports of wheat not in bond and not covered by drawback were 1,934,000, 49,000 and 117,000 bushels, respectively, for the same 3 years.

d. **The Amount Used for Seed, Feed, and Similar Uses.**—(The usual assumption has been that no equalization fee would be collected on such wheat.) This amount would vary somewhat from year to year, but no very useful data are available on this subject. Apparently, from 80,000,000 to 90,000,000 bushels are used for seed each year, and from 25,000,000 to 100,000,000 bushels for feed, the amount varying with the price. Perhaps 150,000,000 is a good average.

e. **Present Effect of Tariff Duty.**—This has been estimated in Chap. VII as 5 cents per bushel since 1924 on hard spring wheat. On prices of hard winter wheat, the tariff has had no effect since 1925. The maximum effect in any year was probably about 20 to 30 cents per bushel in 1925, and in 1927 it was apparently effective in raising the price of only high-protein wheat. Prices of high-protein spring wheat have probably been raised 5 cents more than those of ordinary spring wheat. Wheat prices in the United States will be raised above their usual relation to the world level by the amount of the duty not now effective, less the equalization fee.

f. **Effect of Plan on Imports.**—With the equalization fee collected on imports as well as on domestic production as provided in the last bill, imports would be increased very little. The wheat which comes in at present and pays the duty of 42 cents a bushel is very high in protein content, or is seed wheat, or is special in other ways, or is nearer to some buying point in the United States than to any in Canada. Under the last plan proposed, such wheat would pay the 42-cent duty plus the equalization fee, but the flour made from it would sell for a price higher than at present by the amount which the plan would raise domestic prices, and this would encourage them to import a little more wheat. Thus, if the plan raised domestic prices of wheat 25 cents a bushel, and the equalization fee paid on imports was only 15 cents, the miller interested in importing high-protein wheat would have a 10-cent smaller obstacle to overcome. Probably not more than a few million bushels would enter, on the average; but whatever did enter would have to be offset by additional exports. If the fee was not collected on imports, the importations would be considerably larger.

g. **Effect of Plan on Domestic Consumption.**—Consumption of wheat and flour would decline a little with higher domestic prices, even though the demand for wheat is relatively inelastic. Dr. Mordecai Ezekiel has estimated the additional exports that would be caused by this at 7,000,000, 37,000,000 and 43,000,000 bushels, respectively, for the years 1925, 1926, and 1927. This would make total exports of 109,000,000, 256,000,000 and 250,000,000 bushels, respectively, not counting for additional imports.[4]

h. **Effect of Above Enlarged Exports on World Prices.**—Dr. Ezekiel has estimated these effects at nothing, 2.0 cents, and 2.4 cents for the same 3 years.[4]

The equalization fee on hard spring wheat in the 3 years as estimated by the author on the basis of the above figures, allowing 150,000,000 bushels for use of seed, feed, etc., would be 8.6, 15.8, and 14.6 cents, respectively.[5] The general level of wheat prices prevailing in the United States in these years, assuming the perfect operation of the plan, would have been raised by the amount of the tariff duty, less the above amounts, less the declines in world prices above noted, less the effect of the tariff in these years, less the cost of administration

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[4] In his paper before the American Farm Economic Association, December, 1928. His colleague L. H. Bean assisted with some of the analysis. There is grave danger in such analysis of overestimating the effect of prices on consumption of staple crops especially. People do decrease their consumption for a year or two if prices are high; but presently they get used to the new level of prices and consume about as much of staple human foods, especially of the cheaper of them, as before. The variations in consumption upon which such analyses are based are mostly of the year-to-year sort.

[5] Computed as follows:

$$\frac{109{,}000{,}000 \times \$0.42}{526{,}000{,}000} = \$0.086; \quad \frac{256{,}000{,}000 \times \$0.42}{682{,}000{,}000} = \$0.158$$

$$\frac{250{,}000{,}000 \times \$0.42}{722{,}000{,}000} = \$0.146$$

of the plan. Assuming 5 cents as the average effect of the duty, and 1 cent per bushel as cost of administration, prices would have been raised 21.0 cents per bushel on the average, combining the three crops according to their importance. The net increases would have been 27.4, 18.2, and 19.0 cents, respectively, for the 3 years.[6] The increases would have been less than these at points like Buffalo with excellent transportation from Canada; but more on all the types of wheat not now affected by the tariff. Hard winter wheat would have had its price raised about 24 cents, on the average.

Of course, such information as the foregoing would not have been available for these crops in advance. The McNary-Haugen bill required the board to estimate the amount of the fee in advance, and take a chance on its working out somewhere nearly right. A surplus or deficit could be carried over and balanced out in the succeeding years. This should not have raised any serious difficulties. The buyers of wheat would know in advance of their buying the amount of the fee which they had to pay, and would deduct this from their bids on wheat. It is supposed that they would be willing to assume that the board was going to contract enough wheat for export to raise prices in the United States the full amount of the tariff duty less the equalization fee. They might not have been willing to assume all this the first year.

If the higher prices were to expand wheat production, as is commonly affirmed, the effect on the size of the fee would be as indicated in the following, assuming no direct effect of tariff duties, as would likely be the case with crops of 800,000,000 bushels and over:

Assumed crop, bushels	Fee *	Premium per bushel	Decline in world price	Net gain to growers in United States
800,000,000	15.8	26.2	2.0	+24.2
1,000,000,000	21.4	20.6	12.0	+ 8.6
1,200,000,000	25.7	16.3	24.0	− 7.7

* Assuming 1 cent as cost of administration.

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[6] If the effect of the duty for each year separately is considered, the net increases would have been something like 8, 23 and 24 cents for the three years.

The declining premiums and net gains to growers would, in themselves, be a rather effective check on production. The crop probably would not be increased much beyond a billion bushels at the most.

The cost of the plan to the consumer would be the full amount of the tariff duty—what the growers got plus the equalization fee less whatever effect the tariff duty now has. Feeders of wheat would pay the same premium, unless exempted, as will be explained later, in which case they would pay what the consumer does less the fee.

The McNary-Haugen plan did not propose to use the plan of the "export dumping" with cotton. Nevertheless, it is instructive to consider it. Let us assume a tariff duty of 5 cents per pound. There would be no effects of any present tariff duties to consider. Exports of cotton in the form of cotton goods must be included with exports of cotton manufactures, since the exporters of manufactured goods must be reimbursed the same as the exporters of raw cotton.

Following are summarized the data on these points for the (calendar) years 1925, 1926, and 1927:

	1925	1926	1927
Production, thousand pounds	8,052,000	8,988,000	6,394,000
Actual exports of cotton and cotton goods, thousand pounds	5,230,000	5,555,000	5,842,000
Decrease in domestic use of cotton goods, thousand pounds	338,000	440,000	297,000
Exports under the plan, thousand pounds	5,568,000	6,995,000	6,139,000
Equalization fee, cents	3.46	3.34	4.80
Decline in world price, cents	0.52	0.76	0.82
Price increase remaining, cents	+1.02	+0.90	− 0.62

Domestic consumption of cotton by mills in the United States would probably decrease 15 to 25 per cent of normal. Exports would be increased from 200,000,000 to 500,000,000 pounds, which would cause world prices to decline from ½ to 1 cent per pound. Cotton mills in England and other countries would receive their raw cotton of slightly lower prices than at present. Cotton mills in the United States would pay 3 to 4 cents more than the European mills for their cotton. Duties on cotton manufactures would need to be raised to prevent imports of cotton goods for domestic consumption.

Assuming a cost of $500,000 for administering the plan, and no change in production, there would have been around $123,000,000 left as additional income from the three cotton crops such as those in 1925 to 1927.

But if domestic cotton production had expanded 10 per cent under the plan, the growers would have lost from $100,000,000 to $200,000,000. The equalization fee would have ranged from 3.34 cents per pound in 1926 to 4.82 cents in 1927, and the decline in world prices would have ranged from 0.52 cent per pound in 1925 to 0.82 cent per pound in 1927.[7] The reduction in world prices is large because the United States furnishes so large a part of the supply of cotton.

A duty of 10 cents instead of 5 cents a pound on cotton would have resulted in an average gain of around $114,000,000 a year, assuming no expansion of production.

These data make it clear why representatives of the cotton-growing districts have not been interested in the plan for selling the export surplus as applied to cotton. There might be a slight gain with a small tariff duty if acreage did not expand; but cotton acreage is very responsive to higher prices.

We may judge of the effect of applying the equalization-fee plan to lard by considering the following data: Commercial lard production averaged 1,504,375,000 pounds from 1925 to 1927. Exports averaged 708,819,000 pounds. The present tariff duty of 1 cent per pound is not effective. The equalization fee would have averaged 0.47 cent per pound, if collected on all of the commercial production, leaving a domestic premium of 0.53 cent per pound, assuming no decrease in domestic consumption, increase in exports, decline in world prices, or cost of administration.

The increase in exports under this plan as computed by Dr. Mordecai Ezekiel[8] would have decreased world prices nearly the

[7] Mr. L. H. Bean of the Department of Agriculture, who has had access to more data and has made a fuller analysis of the problem than the author, estimates that world prices would have been reduced 1.3 cents in 1925 and 3.0 cents in 1926 by the increased exports given in the table.

[8] A paper read before the American Farm Economic Association, December, 1928.

amount of this premium. The net gains would have just about paid the cost of administration. Higher tariff duties and bounties would result in proportionally larger equalization fees and declines in world prices with resulting smaller chances of profit.

For all hog products combined, Dr. Ezekiel has estimated that net gains of from $3,000,000 to $9,000,000 could have been made under this plan from 1921 to 1926 if the entire increase in value of the products was carried into prices of hogs. The price of hogs would have been increased from 3 to 9 cents per hundred pounds.

The above estimates for individual commodities under this plan include all of the costs but not all of the gains to farmers. If the cost of wheat to consumers in the United States is increased 42 cents per bushel, and consumption is reduced to 43,000,000 bushels, the demand for other products would be increased by a corresponding amount. Potatoes and other vegetables, as well as meat, would be substituted for wheat to a slight extent. The resulting increase in prices of these competing products would probably be too small to measure statistically. But even a very small increase in the price of such a large volume would add sizable amounts to the returns of farmers. Wheat would bear the full cost of the export bounties, but other products would share in the gain in domestic prices.

The gains of producers of beef cattle and sheep from an equalization fee applied to hog products might be considerable. While the net gains to hog producers after paying the equalization fee might be no more than the 3 to 9 cents per hundred pounds above estimated for 1921 to 1926, the increase in cost of hog products to consumers in the United States is estimated at 17 to 29 cents per hundred pounds live weight. The reduction in consumption of lard, hams, shoulders, and bacon is estimated at from 35,000,000 to 98,000,000 pounds. Some other products would be substituted for this amount of hog products. Probably the demand for beef and mutton would be increased most, but the prices of other products would also feel the effect of this change in demand. If beef cattle and sheep prices increased 5 cents per pound, the gain would be around $8,000,000. An equalization-fee plan applied to the export branches of our agriculture would, consequently, tend to raise the general level of agricultural prices in the United States. The costs would be borne by producers of the export commodities, but the gains would be shared by practically all farmers in the United States.

The issue as to whether or not the McNary-Haugen scheme will expand agricultural production was not satisfactorily discussed in Congress, nor in the veto messages. The statement appears in the latter that "high prices in any given year mean greater acreage the next year." That this is true only to a limited extent has been demonstrated in Chap. IV. The defenders of the measure could make a better case than they have against this narrow statement. But they have not proved that a price definitely recognized to have been put upon a higher level will not within 5 or 10 years result in an augmented volume of production. As pointed out above, the statistical studies that have included the cumulative effect of even 2 or 3 years of good prices, even though these were due merely to a succession of short crops, all show unmistakable evidence that acreage responds to price changes. The failure of acreage to contract in a period of depression does not prove in the least that it will not expand with higher prices.

There is much point to the statement that a good part of the response observed when single crops are studied is the result of shifting from one crop to another. But there are two answers to this. One is that most areas in the United States produce only one important farm product for export. Much of the Corn Belt really has only one; likewise of the Cotton Belt. If the equalization fee really raised cotton or corn and hog prices appreciably, there would be a shift to these products without encroaching on the area for any other export product except wheat in some states. In Kansas, Nebraska, and Indiana, wheat and corn acreage would divide the effect of the stimulus; in Oklahoma and Texas, wheat and cotton. In the spring-wheat region, the stimulus would be shared by wheat, flax, and rye. The other answer is that new land could easily come into crop use, and more product could be obtained from the same area. A reasonable judgment in this point is that more land would come into crops. Statistical studies have demonstrated a high degree of correlation between the prices of cotton and the amount of fertilizer used the following year.

The McNary-Haugenites have not at all times and places contended that their plan would not increase production. As already pointed out, some of them have hoped for agricultural expansion, thinking it the nation's due. But none of them wants the decline in prices that would accompany it. In the 1928 bill, there was the definite provision that the board might refuse to assist in the marketing of any product that contrary to advice of the board showed a ''substantially greater than normal increase.''

The veto message returns to the idea so much played upon by Secretary Jardine and President Coolidge in their various public pronouncements, that the ideal production program for American agriculture is one which is highly diversified. At times, this has been carried to the point of suggestion that we ought to cut out most of our exports and try to grow most of our own sugar, wool, and even rubber. The authoritative answer to this appears in the following quotation from the recent report of the deans and directors of all the agricultural colleges and experiment stations:

> Diversified farming has been offered as a sort of panacea for all agricultural ills. Diversity has been taken by many to mean a little of many crops and products and not much of any one. The trend in American agriculture is and should be towards a few well-chosen enterprises on each farm. Specialization in the production of two or three well-adapted products rather than wide general diversification is the rule on many successful farms. The application of science and technical skill to agricultural production favors specialization in a few rather than in many products. Increased use of machinery also favors specialization. Farmers cannot afford equipment for small areas of any one crop. To do the work by hand limits the amount that can be done and increases the cost. Farmers are therefore specializing in the few products for which their region is best adapted economically and naturally. Small areas and great diversity may be desirable in limited localities where production of home products are essential to a good food supply for the farm family, but commercial production demands specialization and concentration.

One may, however, accept the judgment of the deans on this point and also accept the opinion of the veto message to the extent of admitting that the McNary-Haugen plan might result in a little too much stress on certain crops, the crops being conspicuously those which make continual draughts upon the soil.

But the objection is equally valid against a tariff on wheat or flax.

The 1927 veto message contained the specific charge that the plan would mean that "we shall send cheap cotton abroad and sell high cotton at home," and thus put our cotton mills out of business. As long as there is no import duty on cotton, a great lowering of the price abroad would be impossible. The cotton growers who were backing the measure had no interest from the beginning in a plan for selling two-thirds of the cotton abroad at a lower price than at home. They felt that it would leave the growers little if any net increase in price after the equalization fee was collected or exports had increased, as they would if the domestic price was raised. If an import duty had been provided for cotton, the measure would have lost most of its Democratic support.

The 1928 message states that it "would be conceivable that the foreign mills could obtain American cotton for prices substantially less than those paid by domestic mills," and then slips into the positive statement that foreign mills "would undoubtedly capture our existing export markets" for cotton goods. But the bill clearly provided only for the more orderly marketing of cotton. Whatever price changes might result from this would affect foreign prices the same as domestic prices. The equalization fee on cotton would be recompensed out of a higher world level of prices, or a better domestic marketing system, or not at all. The only exception which must be made to this statement is that the board might have exported too large a quantity of cotton some years, making it necessary to ship some back, if the domestic mills were to supply the usual markets. In such a case, the domestic price might temporarily have risen as much higher than the foreign as the cost of transportation of cotton, or probably cotton goods, to the United States. The possibility of this is real enough to give a little point to the arguments advanced on the floor of Congress by representatives from the textile districts, and to the statements in the veto message. If a tariff duty were applied to cotton, a compensatory duty would surely be provided for cotton goods and the textile mills would be as well protected as before, except against competition with silk and rayon.

For export commodities carrying an import duty, like wheat, the 1928 bill, following an attack on this point in the first veto message, provided that the equalization fee was to be collected on imported farm products and "any food product" derived therefrom. The would not really be necessary; but without it, as will be explained more fully in the next chapter, somewhat more Canadian wheat would come to adjacent mills in the United States; also more high-protein wheat would be imported.

The strongest reason which the administration had for opposing the bill was scarcely mentioned in the first veto message. It has probably been best expressed by Secretary Mellon in his official letter of June 25, 1926:

> Foreign consumers under the proposed plan will secure American commodities at prices below the American level. European labor could purchase American products at a lower price and could live more cheaply than American labor. Foreign industrial costs would be lowered and the foreign competitor assisted in underselling American products abroad and in our home market.

In the 1928 message, this point was included in Number VI in the last of six "major weaknesses," but in company with the charge taken over from the first message that our producers of dairy and certain other similar farm products would also be penalized. The McNary-Haugenites have not all talked alike on this point. An increasing number of them were found referring to the administration program as designed to expand industrial exports and contract agricultural exports. Their discussion was replete with attacks on the agricultural self-sufficiency program of the expiring administration. Witness the following from *Bulletin* 17 of the North Central States Conference:

> If the Hoover-Mellon policy of expanding industrial exports, no matter at what costs to other groups, means anything at all, it means the definite submergence of agriculture. These men and their policies say, in substance, that American farmers must provide the food and raw material for American industry and labor at prices no higher than foreign manufacturers and labor pay. Why? In order that American industry may export manufactured goods in competition with Europe.

Other statements went farther and positively demanded that agriculture be allowed to expand in the export market along with industry. There can be no doubt that the plan would work as Secretary Mellon suggests, but not to any great degree—probably no more than is warranted if the nation really has an earnest desire to revive agriculture or check the urbanization movement. Granted that the McNary-Haugen plan would raise the price of wheat the full amount of the tariff duty, of how many other farm products is this true? The preceding chapter pointed out that tariff duties are already effective on sugar, wool, flax, lemons, raisins, and nuts. They are effective locally, or on certain grades, or part of the time, on wheat, corn, oats, rice, dairy products, eggs, tobacco, potatoes, and a considerable list of other products. If the McNary-Haugen plan could be applied to the second list, it would raise the price of most of them only when and where the tariff does not. Hence, if the bill had become an act, and if it had been put into operation fully at once, it would not have greatly raised domestic prices of farm products and of food and clothing. The statements in the veto message on this point, especially the one referring to its allowing the board to "alter the cost of living at will," are greatly exaggerated. But not so much exaggerated as those usually made by the sponsors of the bill. With the plan coming into operation gradually, a commodity or so at a time, as would surely be the case, its effect on the cost of living would not be noticed much.

As to the case for agriculture, the first veto message specifically charged the bill with intent to injure the dairy and feeding farmers by raising the price of mill feed and corn. The answer of the Committee of twenty-two was that the corn-import duty is low; and it might have added that it was already fully effective against much of the dairying in the East. As for mill feeds, there was no provision in the measure for exporting the surplus and making the tariff effective. Mill feeds vary in price closely with the price of corn and oats, and would continue to do so. A further answer might be that the tariff on dairy products has already been raised and this might make it more effective.

The veto message spoke of the false national economy of producing a surplus and dumping it "at a loss on the foreign market." The President's last opening message to Congress had a remark in similar vein. This represents an unfair interpretation of the phrase "at a loss" as used by the McNary-Haugenites. What they meant was, at a loss as compared with the new high domestic level established, not a loss as compared to prices received with no such plan operating. Nevertheless, if the plan did increase production and exports and thus lower export prices, then the selling prices abroad would be at a lower level and, hence, relatively at a loss. But no argument is needed among economists to prove that much of the production maintained by protective tariffs is likewise carried on at a national loss.

Much argument has been wasted on the question whether or not the equalization fee would be a tax. The first veto message discussed it as a tax for the benefit of a few. The second veto message condemns it as a sales tax levied on the entire community for the benefit of the producers. Think of this as coming from the haunts of the protective system! The trend of the Attorney-general's opinion, however, is that it is not a tax, and that it "cannot be sustained under the taxing power of the Constitution."

The most extravagant language of the veto message is that which relates to its administrative difficulties, and, no doubt, properly so. Taking it in its entirety, the program as outlined in the last two bills would put the board in a position to influence the market continually by its decisions. There can be no question that the trade would be more uncertain than at present as to the future course of prices, because it would have the human conduct of the board to forecast as well as the weather and the behavior of the producers and consumers. Although the upper limit to which prices could be raised is fixed by the tariff, the board would not always be able to keep it exactly there. Such subtle influences as the threat of new contracts to exporters would operate to determine prices. Purchase for storage and insurance against price decline would be factors affecting prices; but how, and to what extent, nobody could forecast with reasonable certainty. In time, of course, the conduct of the board would tend to become regularized, and the effect of different courses of action better understood; but it would never cease to be a disturbing factor. The board might easily unstabilize prices more by its errors in judgment than stabilize them by holding seasonal or yearly surpluses in reserve.

The later versions of the McNary-Haugen plan provided for collecting the fee from the processors and exporters and transportation agencies whenever possible. This would have reduced greatly the number of agencies whose records would have needed to be supervised, but still would have left a rather difficult problem of administration. It has generally been assumed that wheat sold by one farmer to another for seed or feed would be exempted from paying the fee. If so, it would exchange at the domestic prices prevailing under the plan. But if this were done, then dealers in such wheat would have to be granted the same privilege or their business would suffer—the farmers would take it into their own hands. If an effort were made to collect the fee on such wheat, much of it would escape, and transactions would tend to be arranged in which buyer and seller split the amount of the equalization fee. There might be some difficulties, also, with the small mills which buy this wheat direct from farmers. No doubt custom milling would be encouraged somewhat. Henry Wallace does not think the McNary-Haugen plan any more difficult to enforce than is the gasoline tax. The comparison is an excellent one; but the author inclines to the belief that the advantage would be somewhat in favor of the gasoline tax, especially if the tax were to be collected in transactions in feed and seed wheat. If the McNary-Haugen plan were to be adopted, it would surely be wisest not to include such transactions. There would be difficulties in applying the equalization fee plan to pork. Only 80 per cent of the pork slaughtered in the United States in 1927 was in inspected plants. Besides, the vast amount of slaughtering by local meat markets, is the slaughtering done on farms for sale of fresh pork and various cured-pork products. All of this would be greatly stimulated, whether or not the fee was supposed to be collected on such slaughtering. So far as to the hogs that passed through the inspected packing plants, there would be no important difficulty of administration. Probably exporters of corn would need to be recompensed for deficits from their operations, since the price of corn would tend to rise with the price of pork in the domestic market. Exporters of corn products would be in the same position. This might carry with it the need for collecting fees on corn sold to processors.

The case made against the measure on the score of its stimulating hostile foreign legislation was an excellent one, but also has some precedents in the protective tariff system. More will be said on this subject in the chapter on Export Debentures.

Comparing the first and last versions of the McNary-Haugen bill brings out some significant trends that may point the way to future developments:

1. The first bills were emergency measures; the recent ones attempted to put agriculture definitely and permanently on a higher plane than formerly.

2. The later bills linked the scheme up with cooperative marketing. The general contention of the administration that the proper solution of the surplus problem is to let the cooperatives handle them, the new bill met by providing $400,000,000 that might be loaned to cooperatives to enable them to do this; and providing that equalization fees were to be used to finance the cooperatives in this task only as a second resort. This bill can, therefore, be described as including the administration's cooperative marketing plan, appearing first in the Capper-Haugen bill, in 1925, in more complete form later in the Fess-Tincher and Curtis-Crisp bills, but adding the equalization-fee device as a second resort. Needless to state, the proponents of the measure fully expected that resort to the equalization fee would prove to be necessary; and hence the administration could with entire consistency reject the whole scheme.

3. The cooperatives have joined the movement increasingly, and, hence, have come to accept more government aid and intervention as desirable than formerly. But it must be of the right sort. President Coolidge had been throwing back at them the arguments which they used for defeating the Capper-Haugen bill. Part of this difference, however, is explained by differences between cooperative groups. The National Council of Cooperatives was wrecked over this issue.

4. The equalization fee was broadened to provide funds for a wide group of purposes. In its later form, it was essentially a device by virtue of which the government exacted ratably from all producers the funds with which to support a program of orderly marketing in which the cooperatives were to play a major role. As thus framed, the measure virtually provided compulsory pooling so far as certain of the marketing operations are concerned.

5. All the agricultural commodities were finally brought under the purview of the plan.

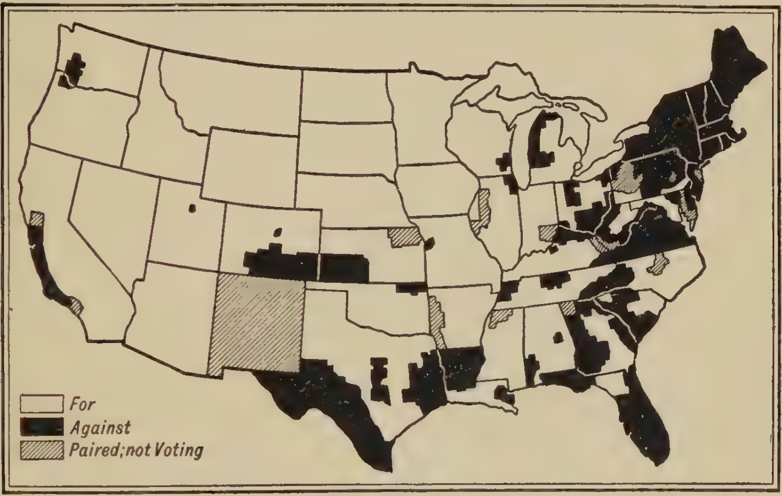
6. The later bills pushed the point of collecting the fee nearer

and nearer to the export market, partly to simplify the task of collecting, partly to remove it as far as possible from the farmer's conscious experience.

7. The later bills worked farther and farther away from the language and even suggestion of price fixing.

8. The presentation of the plan more and more carefully avoided mentioning the tariff as a factor in its operation; and the debates on the subject included less about "making the tariff effective" and more about orderly marketing.

CHART 22.—HOUSE VOTE ON MCNARY-HAUGEN BILL, FEBRUARY, 1927



9. The essential idea of exporting the surplus at less than the domestic price has been adhered to throughout, except that in the last bill it became on paper a device of second resort.

10. More recognition was given in the later measures to the need of control of production.

Most of the votes against the McNary-Haugen plan, like those for it, were motivated by sectional interests, not by well-considered reasoning. The map of the 1927 House vote shows this very clearly. Outside of the industrial East, most of the remaining opposition was from congressional districts in cities. These do not bulk large on the map, but they did in the House. The map also makes clear that there are definite limits to the amount of additional support which such a plan can expect to receive. New York, Pennsylvania, Virginia, and Louisiana were the principal remaining rural strongholds holding out against it.

The equalization-fee principle is not dead. Its proponents will be heard from when new legislation is proposed. The forms which it may take may vary, but the essential principle will remain. It has been likened by some to the cheap-money fallacy of populism and free silver. This represents a complete failure to understand it. There is no fallacy about the equalization fee idea. The only questions are: Are its ends proper and worth while? Can it be made to work? How serious will be the attendant consequences? There is no doubt that if it could be made to work, it would attain its ends. The attendant consequence most to be feared would be expansion of production in the newly subsidized lines, followed by abandonment of the plan, leaving the growers in a worse plight than now.

CHAPTER IX

EXPORT DEBENTURES

The plan next most in favor with Congress for raising prices of farm products by ''making the tariff effective'' is known as the ''export-debenture plan.'' The essential principle of this plan is the paying of a bounty on exports of farm products in the form of negotiable instruments, called ''debentures,'' which can be used by importers in paying customs duties. The price of domestic farm products would be raised to the extent of the bounty; likewise prices to consumers. The revenues of the government would be reduced by the amount of the export debentures issued. Tariff duties must be at least as high as the export bounties, otherwise a return flow of the product would set in.

This plan was first brought to the attention of Congress in the form of the McKinley-Adkins bill in January, 1926. Professor Charles L. Stewart of the University of Illinois has been responsible for bringing it before the American public. He says that he derived it from the German Import Certificate system, which will be described later. The National Grange endorsed the plan at its next annual meeting and has vigorously supported it ever since. Hearings were held on it in the second session of the sixty-ninth Congress, but no vote was taken. In the seventieth Congress, the plan took form in the Jones-Ketcham bills. A motion to substitute the Ketcham bill for the equalization-fee plan was defeated in the House committee by a vote of 13 to 9. Congressman Ketcham presented a minority report favoring it to Congress, and 3 hours were given to discussion of it on the floor late in April. A vote to substitute it for the McNary-Haugen bill on May 3 was lost by a vote of 185 to 146. Most of the votes for the debenture plan were cast by the opponents of all price-raising plans as a strategic maneuver. The National Grange reendorsed the plan at its last annual meeting in December.

The import certificates used in Europe are closely related to the drawback system which prevails in the United States. In place of refunding the manufacturer, as in the United States, the duties, less 1 per cent, paid on the foreign raw material contained in the export goods, upon a sworn affidavit of the exporter as proof of such use, the manufacturer is allowed later to import duty free the same amount of the same commodity, or a corresponding quantity of the raw material used in the export product. This is arranged by issuing certificates when the goods are exported that can be used to pay the duties on imports later. These certificates are made negotiable and enter freely into speculative trade.

Import certificates were introduced into France in 1820. At first, proof had to be furnished that the manufactured product exported contained the identical raw material upon which an import duty had been paid, and the import and export transactions had to take place with the same customs office. Both of these restrictions were abandoned in 1850, and the system was able to develop into its present form. The requirement of proof of identity was abandoned in Germany in 1894.

In both of these countries, the object of the import-certificate system is to offset the disturbances of the internal price structure set up by a protective tariff system. This is well illustrated by the case of Germany. Under conditions of free trade, grain in eastern Germany was exported in considerable quantity directly through the Baltic ports. Western Germany was a deficit area, importing grain from the west. When tariff duties were imposed, prices in western Germany rose by the full amount of the duty, and the growers in eastern Germany found that their best outlet was in western Germany; but the prices which they received were less than those in western Germany by the amount of the transportation cost.

The way in which the import-certificate system offsets the price inequalities produced by tariff duties can be made clearer if we imagine three situations in Germany—the first with no import duties, the second with import duties, and the third with import duties plus import certificates. In the first situation, prices in western Germany will be higher than in eastern Germany to the extent of the cost of transporting wheat into western Germany and transporting it out of eastern Germany. In the second situation, prices in western Germany will be raised by exactly the amount of the tariff duty, whereas those in eastern Germany, where wheat production is on an export basis, will not be raised at all if exports continue. If the duty is high enough, however, it will pay them to ship their wheat to western Germany, in which case the price will be that in western Germany less the cost of transportation from eastern Germany. In the third situation, when the import-certificate plan has been established, prices in western Germany will be the same as without the import certificates, but those in eastern Germany will be raised by the amount of the tariff duty from what they were under free trade. Thus the price relationship between eastern and western Germany which existed under free trade will have been reestablished, but the prices in both areas will be higher than before by the amount of the tariff duty. It is proper to say that the import certificates will *act as export bounties in eastern Germany* and increase the amount of production for export. But, at the same time, the higher prices in western Germany ought to stimulate more domestic production and decrease imports. With smaller imports, the demand for import certificates will be decreased and then prices will decline. Thus imports and exports act as a check on each other.

Certain other features of the working of the import-certificate system in Germany should also be brought to our attention. In the old free-trade days, much Russian wheat had passed through Germany to the Baltic ports, being mixed with German wheat in passing in order to form the blends of wheat demanded by foreign mills. Setting up tariff barriers interfered with these mixing operations very seriously. The import-certificate plan restored the Russian wheat trade to its former basis. Also in the old free-trade days, millers in eastern Germany used considerable high-gluten wheat, which they imported. After the duties were levied, they had to obtain this in eastern Germany where most of the wheat is of the low-gluten type, or else pay the import duty. The import-certificate system enabled them to import it as before without paying the duty, and thus restored German trade to a rational basis so far as quality differences are concerned.

Both of these features of the system have an important lesson for all of the price-raising plans involving the paying of an export bounty. Let the export bounty be exactly equal to the tariff duty, as under the German certificate system, and exchange between countries will be on a free basis *so far as location advantages* and *quality differences are concerned.* Prices within the country and without, except for location factors, will differ by exactly the amount of the duty. The American miller will be able to buy wheat for 42 cents extra in the United States, or at the same price by paying the 42-cent duty on Canadian wheat. He will buy where he can get the grade and quality which will serve his purposes best for the least money. There will be a differential between grades in the United States and in Canada, but it will reflect supply and demand conditions for this grade in the two countries combined, not in each country separately, as is largely the case when there is a stiff tariff duty in one of the countries. Spreads between prices of high-gluten and low-gluten wheat in the United States will be narrowed whenever the Canadian supply of high-gluten wheat is the larger. Similarly, with respect to location advantages, any milling point in the United States which found that the tariff duty plus freight to a Canadian producing area was less than the United States price, supposedly raised 42 cents by the export bounty plus freight to the nearest domestic producing area, would buy in Canada. Under the circumstances, some grain would be imported and prices would be increased less than the 42 cents in some of the producing areas in the United States. The equalization-fee plan provided for an export bounty equal to the tariff duty, and hence would have worked in this way, had not further provision been made in the last version of it for collecting the fee on imports the same as on domestic production. This would have left only the amount of the equalization-fee as the obstacle to such exchange, instead of the full tariff duty as at present.

One must keep clearly in mind that under such a system the tariff duty still stands as an obstacle to general imports. The level of prices for the commodity in the protected country is raised above that in the exporting country by the full amount of the duty. But there will be increased imports at certain points accessible to foreign supplies, and of certain types most available abroad. The exports will be increased by the amount of the increase in imports.

When the import certificates were made exchangeable in Germany in 1894, they were applied to exports of wheat, rye, barley, oats, legumes, rape, and rape seed. Any time within a period of 6 months they could be used as payment of import duties for the same quantity and the same species of grain as had been previously exported. After the expiration of 4 months and up to the end of the 10 months following the issuance of such import certificates, they could also be used to pay the duty on certain other goods specifically named, the most important of which were coffee and petroleum. This had the effect of making the grain flow almost exactly as before the tariff was imposed. The growers in eastern Germany exported their wheat and received import certificates equal to the amount of the duty. They sold these to millers in western Germany who used them to pay import duties on grain from farther west. The wheat prices were restored to the same territorial relationship that prevailed before tariff duties were imposed. The price of the import certificates reflected the supply of them made available by exporters in eastern Germany and the demand for them by millers in western Germany.

In 1906, Germany modified its provisions with respect to import certificates by permitting them to be used for other grain varieties than those exported, which had the effect of making them still more salable and of raising their value almost to par. It had one other effect which needs to be brought forcibly to our attention. With different tariff rates for the different grains, and the import certificates free to be used for any kind of grain, it proved to be good business to export oats, upon which the duty was 17 cents per bushel, and import feed barley, upon which the duty was only 5 cents per bushel. As a result, oats production increased so as to exceed domestic demands. The rates on wheat and rye were such as to develop an export surplus of rye. This points to the fact that the whole basis upon which a tariff schedule is set up must be changed when an import-certificate system is combined with it.

Coffee and petroleum were dropped from the list in 1911. The outbreak of the World War caused the whole agricultural tariff system to be abandoned. When it was restored in 1925 the need of import certificates became at once apparent, and the system was restored on very nearly its prewar basis, the principal change being the inclusion of live hogs, dressed pork, and certain feedstuffs. The certificates are now valid for 9 months after issuance.

The drawback system of the United States could be modified so that it would not be greatly different from the import-certificate plan. If the provisions for proof of importations were drawn liberally, it might be possible under it to import one quality of raw material for use in manufacture while exporting another type of it. It would be only a short step to what virtually amounts to export bounties, namely, making the ratio of raw material to finished product such that a drawback would be received on a larger quantity than was used in the manufacturing process. Italy, in 1896, thus arranged an export bounty on cotton yarns and fabrics. Russia has applied such an arrangement to both cotton and woolen manufactures. As already pointed out, Germany secures the same results by permitting the various types of grains to be subject to the import certificates and making the rates of duty different for the various commodities.

If the arrangement for manufacturing in bond is liberalized so as to permit different qualities of wheat to be used in the exported product than is imported, it takes on much of the character of the import-certificate system.

THE KETCHAM BILL

The final export-debenture plan presented to the last Congress provides for export bounties on wheat, corn, rice, cotton, tobacco, swine and cattle, or any food or manufactured product of these.[1] The rates named are one-half the tariff duties now prevailing, except for 2 cents per pound on all tobacco and 2 cents a pound on cotton. A Federal Farm Board which is set up under the plan is to have power to establish bounties on any other agricultural products of which there is a surplus above "domestic requirements," and when it is found that the cost of production is greater in the United States than in competing foreign countries. The debenture rate to be established in such cases is to represent the difference in cost of production thus determined. No debenture rate is to be higher than the import duty. Manufactured products are to have rates equal to what the debenture would be on the raw product contained in them. The export debentures are to be receivable for payment of imports upon any kind of article imported into the United States. The board is given power to reduce the debenture rates or cancel the issuance of the debentures altogether whenever the average acreage for any 2 years exceeds the average of the seventh to the third years preceding, according to the following schedule: increase of less than 5 per cent, no reduction; increase of 5 to 10 per cent, 25 per cent reduction; increase of 10 to 15 per cent, 50 per cent reduction; increase of 15 per cent or more, issue of debenture suspended for 1 year. In the case of livestock and livestock products, production is to be the basis in place of acreage.

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[1] H. R., 12892. Introduced Apr. 11, 1928.

Along with the foregoing provisions which relate to the export debenture system, the Ketcham bill authorizes the Federal Farm Board to make loans to cooperatives, establish a system of insurance against price decline, set up corporations for the buying and selling and storing of commodities for which there is a temporary surplus, advise the farmers with respect to their production programs, and do all the other miscellaneous things that have been incorporated in the recent farm-relief bills in order to make them as attractive as possible to all the farmers in the United States. These features will be analyzed in later chapters.

COMPARISON WITH IMPORT CERTIFICATE PLAN

1. The plan proposed in the Ketcham bill is exactly the same as the German import certificate plan in the essential principle of its operation, namely, that bounties on exports are paid in the form of certificates to import.

2. The products whose duties can be paid by certificates in Germany are limited to a list of farm products. This means that the volume of debenturable exports is regulated by the volume of imports of other farm products. The last Ketcham bill placed no limit on the export debentures issued.[2]

3. The Ketcham bill proposes rates mostly lower than the tariff duties, whereas equal rates are the essence of the German

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[2] Earlier versions of the plan placed the limit at 40 and 50 per cent of the customs receipt.

system. The Ketcham plan would, therefore, only to a limited extent permit domestic manufacturers to take advantage of location and quality of product in importing, as above described, which is a principal object of the other system.

4. The German plan is, for the most part, applied to commodities which it both imports and exports, the imports being of different types or from different sections of the country than the exports. There may, however, be net imports of some products if there are equal net exports of others. A group of products needs to be included under the plan whose total imports about equal total exports. If not, the import certificates will sell at a discount.

The Ketcham plan, in contrast, is scheduled for a list of products which we export in large volume and import very little. The import certificates must therefore mostly find a market outside this list of commodities, as already explained. If the debentures were for the full amount of the tariff duty, imports even of this list would increase considerably; but they would scarcely begin to absorb the certificates.

5. As compared with prices under free trade, the German plan, taken in conjunction with the tariff duties, which are a necessary part of it, raises prices over the whole country by the full amount of the tariff duty. In part of the country, or on some types of product, it is the tariff that raises the price to this level; elsewhere or on other types, the export bounty does it. (This assumes that total imports of debenturable commodities equal total exports of them.) In general, the Ketcham plan would raise prices, over what they would have been under free trade, by the debenture rate less any additional transportation costs due to selling in new markets farther away. Some deficit areas, however, might have their prices set by the tariff duties at a point above the debenture rate. The geographic distribution of prices would be more artificial than under the German plan; but not as much so as under a simple protective tariff.

6. The German plan, taken as a whole, tariff duties plus import certificates, stimulates production by the full amount of the tariff duty. It indeed provides a bounty on production of the commodities to which it is applied. As compared with a protective tariff system alone in such a situation, it *serves as an export bounty in the exporting areas,* or of the export types,

and reduces production in the deficit areas, or of the deficit types. The exports check the imports and vice versa. On the whole, one would expect the production to be increased more than with just the simple protective scheme. Including more commodities of the import type from time to time, as Germany apparently has done, will permit the expansion of production thus stimulated. The Ketcham plan is a straightforward export bounty, subject to the subsidiary checks set up in the bill.

7. In comparing the two plans, however, one must take into account the combined effect of tariff duties and import certificates. Germany is using the combination to develop an agriculture that has failed to provide food enough for its population. The combination that the Kecham bill would represent would be aimed at checking a decline of agriculture before it reached the deficit point, and probably would cause it to expand again. Both are intended to serve as bounties on production, but under different circumstances.

8. The German plan causes reductions in customs receipts only on the list of farm products named, whereas the Ketcham export debenture plan would reduce revenues from the whole dutiable list to the full amount of the issue of debentures.

FEATURES OF KETCHAM PLAN

The export debenture rates set up in this bill were based on the tariff duties partly because the authors of it could think of no other feasible method of determining them, but probably more because they were thinking of the relationships of their plan to the import-certificate plan of Germany. As a matter of fact, the tariff duties do not furnish a good basis for debenture rates for the United States, for the reason that they were not made for that purpose. The real basis upon which most agricultural duties are being worked out in the United States is complete exclusion of all foreign products. It takes rather high duties to accomplish this for all types of the product and at all seasons of the year, and particularly at all points, in a country as large as the United States. At the same time, most of the United States is on an export basis for most farm products. Export bounties based on our tariff duties would, therefore, work as a strong stimulus to production and export in most of the United

States even though at only one-half the tariff rates. The duties in France and Germany upon which the import certificates are based are on types of commodities of which there is a domestic deficit, or on commodities of which there are regional deficits. The import-certificate system merely extends the effects of the duty to the rest of the domestic production. The rates set up in the Ketcham bill represent the following percentages of values of products of the year 1926: cotton, 11.9 per cent; wheat, 13.6 per cent; rice, 10.1 per cent; corn, 10.1 per cent; cattle, 10.9 per cent; swine, 2 per cent; tobacco (unstemmed filler), 23.6 per cent.

The rates for the remaining agricultural commodities of which we have an excess of exports are to be made equal to the difference in cost of production between the United States and principal competing countries. This would be in theory the full amount of the tariff duty. The schedule of rates thus set up for the different products would be very unequal and would provide greatly varying stimuli to the production of the various commodities. A distribution of production would tend to be set up based on this artificial schedule of debenture rates.

It is not easy to state what would be the proper basis for a system of export debentures in a country such as the United States. Probably the most workable plan would be to base them on their probable effect on volume of production in the principal exporting centers, as determined by analysis of effect of price on subsequent production as explained in Chap. IV.

It seems clear that setting up differences in cost of production as a method of determining the debenture rates would be a serious mistake. In the first place, we already have one agency trying to determine such differences in costs of production, and our experience with it demonstrates that one of them is enough. Secondly, the rates so determined would not be suited to the purpose.

It does not seem possible that the flexible rate provisions of the Ketcham bill will serve as an effective check on expansion of production. An increase of 5 per cent in 2 years is equal to 28 per cent in 10 years. The debenture rate is to be reduced only one-quarter for increases of production or acreage under 10 per cent. Hence, it would be possible to increase nearly 25 per cent in 5 years with a reduction of only one-quarter in the debenture rate. With acreages fluctuating as described in Chap. IV, the debenture rates might be cut somewhat sooner or somewhat later than would be the case with a steady increase in acreage. The alternate highs and lows in livestock production might also make the flexible provision apply sooner or later than would be the case if the production increase were steady. But even with these exceptions, production could surely expand.

Although the plan outlined may not appear satisfactory, it may be possible to set up one which would be. If the increase in acreage allowed was 5 per cent in 5 years rather than in 2 years, the increase in acreage permitted would be much less, and it could begin to apply as soon as the acreage reached the 5 per cent. If the penalties were based on the behavior of exports rather than of acreage and production, the rates would adjust themselves more automatically to changes in domestic consumption, the plan would meet less foreign opposition, and there would be less chance of having the official acreage and production figures now collected by the Division of Crop Estimates somewhat falsified by wilful bias of the reporters. The plan for using moving averages as set up in the bill should be retained, since it introduces a certain desirable element of flexibility. A gradual increase in any product because of changes in economic conditions or methods of production could take place without penalty of reduced debenture rates. However, the necessary lag would be great and not enough to take care of situations that might develop with some of the minor products.

It is probable that the authors of this bill put in the flexible rate provision more largely to meet popular criticism than actually to provide a scheme of control. They probably hold the opinion that a system of debentures applied to all farm products will not produce any general expansion in production.

Of course, there is another theory with respect to this whole matter of increase in acreage. Increase in exports of farm products may be looked upon as very much to be desired. If the country has become too industrial and too little agricultural during the past 20 years as a result of our subsidies to manufacturing, the positive method of rectifying this condition is to stimulate production. It is true that the new production thus brought into existence is somewhat uneconomical in the sense that it would not be profitable without a subsidy from the consumers, but in this respect it is not so much to be condemned as the new production which is encouraged by import duties. Professor Stewart's discussion of the export-debenture plan leaves the very distinct impression that he looks favorably on an expansion of our agricultural production along export lines. Some of this new production would take place on present farms and produce larger farm incomes. Some of it would occur on lands not yet in farms or which has recently been abandoned. The whole agriculture of the United States would take on a new lease of life with an effective schedule of export debentures in operation. It may be averred that such a program of expansion could easily go too far; but there would surely be no difficulty in setting up a system of checks that would prevent this.

It should be pointed out that such an expansion of production would lead to an even more rapid exploitation of our natural soil fertility than at present, and that this above all the nation should guard against; that such an expansion of production would depress the world level of prices of many farm products to a degree that would offset a considerable part of the debenture. If the increase in spring-wheat acreage was according to Warren and Pearson's formula presented in Chap. IV, the 16 cents that the debentures would raise prices above the present tariff effect would increase spring wheat acreage 336,000 the first year and 897,000 by the second year. The 21 cents that the debenture would add to winter wheat prices would increase winter wheat production 1,095,000 acres the first year and 2,920,000 by the second year, if the same formula could be applied to winter wheat. Even if acreage in the United States were to be increased 20 per cent, world wheat prices would be lowered only 9 cents, for the United States produces only one-fifth of the world supply. This increase would be safely within the 5 per cent allowed by the Ketcham bill. Bradford Smith's formula would indicate that the proposed debenture of 2 cents a pound would increase the cotton acreage by 425,000 acres in 2 years, and reduce world prices by 2.1 cents. A cotton price definitely raised to a new level would have more effect, and might cause the check in the Ketcham bill to operate, and surely would make effective the suggested limit of 5 per cent in 5 years. But both of these effects would be greatly reduced if similar bounties were paid on all other important products; but they would still be significant.

Closely related to the foregoing is the reaction to such a plan in foreign countries. Producers of wheat in Germany and other foreign countries would at once ask for legislation to offset the effect of the bounty in the United States. The specific rates set up in the Ketcham bill would tend to be the exact amounts which would be added to the import duties in these countries. The United States has itself furnished an excellent example to the rest of the nations as to how to handle such a situation. When the Australian government under its butter export bounty plan raised the bounty to 9 cents per pound as of Jan. 1, 1929, the Secretary of the Treasury sent out instructions to the Collectors of Customs to impose an additional duty on butter from Australia equal to the increase in the bounty on exports in Australia.

Of course, if there were no increase in the exports from the United States, or if foreign governments could be assured that the imports into their countries would not be increased, such action might be prevented; but the problem would at once arise of what to do with supplies if any increases in production did occur temporarily or otherwise.

Foreign peoples resent export bounties more than import duties partly for the reason that they have not been accustomed to them, and partly because they seem to be an intrusion into their internal affairs. A nation is now generally accorded the right to say what foreign goods its people will be allowed to import; but not the right to subsidize its producers to produce goods to sell in other countries in competition with their own producers. It may be an irrational distinction, but nevertheless it exists.

Consideration must also be given to the effect of the plan on the revenue of the government. At the rates named in the Ketcham bill, and with no changes in imports and exports from those of 1927 and 1928, the export bounties paid out of the customs receipts of the United States would be as follows:

Commodity group	Export Bounty (Thousand dollars)
Hogs and hog products	$6,974
Cattle and beef products	159
Corn and corn products	1,473
Rice and rice products	1,351
Wheat and wheat products	44,153
Tobacco	9,800
Cotton	81,210
Total	$145,120

If production of farm products in 1927 and 1928 had been increased on the average by 5 per cent, with no changes in consumption, export bounties would have been $181,655,000.

By all means the principal argument in favor of the export debenture plan is its comparative ease of operation. The supplementary activities included in the Ketcham bill would require a great deal of administration, but the export-debenture plan itself would leave very little for a Federal Farm Board to do. What little additional government activity was required would mostly be provided by the present staff of the Treasury Department.

Those who have supported this plan most vigorously have had in mind that the revenues lost will be made up by somewhat higher income taxes. If this could be arranged, most economists would agree that the plan was not objectionable on this score; but Congress would be more disposed to make up the loss by levying higher import duties on other products, if any can be found that will yield more revenue, which would increase still further the system of artificial stimuli to production. The other way of obtaining more customs revenues, lowering duties so as to make them more productive, would not be considered for a moment. Whichever way it was arranged, the cost of it would come out of the people of the United States just the same as under an equalization-fee plan. If paying 21 cents a bushel on wheat reduced the government revenue by $50,000,000, and this amount were added to the duty collected on wool and sugar, the consumers of the United States would be no better off than if they had paid the 21 cents plus an equalization fee of 12 cents. If the $50,000,000 could be raised by federal income taxes, the situation would be different to the extent that a different group of the population would be paying the bounty.

Even though the import certificate plan may not be especially well suited to conditions in the United States, it may have much to recommend it for certain products and in combination with other devices. It may fit in with a general tariff system. The import duties collected on some farm products might be used to pay export bounties on others. It may easily be the most workable system for a commodity such as pork, upon which an equalization fee or its like would be difficult to collect. It seems safe to predict that if the United States continues on its present policy of artificial control of production by import duties and other related devices, export debentures will in all likelihood come to play a part. They would prove most useful with products like dairy products and eggs which we export and import in about equal quantities. The time may come when they would be useful with wheat. They might be used now with beef cattle, the import certificates on exports being made receivable for duties on imports of feeders.

The legal basis which Professor Stewart has attempted to establish for the export-debenture plan is built up as follows: If the government has power to remit import duties in order to confer privileges on products exported from Cuba to the United States, it would seem rational to believe that it has power to remit import duties on products of the United States. The power granted to Congress to levy and collect duties would seem to carry with it the power to grant remissions.

RELATIONS WITH THE PROTECTIVE SYSTEM

The import-certificate plan in Germany extends the protective system by making the duties available to other producers of the same commodities or of the same group of commodities. The plan proposed for the United States would extend the duties to an entirely different group of commodities. The argument advanced for this is that our present protective system handicaps the production of these other products by raising the level of wages and cost-goods generally, and thus the bounties will merely be offsets for this. This argument is entirely valid. A protective system gives the protected industry a chance to expand at the expense of the unprotected by setting a level of wages and profits that closes out the marginal producers in the unprotected fields. It raises the prices of the protected products and leaves those of the unprotected where they were. To use some of the revenues obtained from the duties on protected products to offset the disadvantages imposed on others, is not only equitable, but sound economically. All our unprotected industries are undersized from the standpoint of best national economy. If export bounties will bring them back to their proper position, they should be given careful consideration. Using the import-certificate system in this way is accepting exactly the principle of its operation as maintains in its German use. Dr. Joseph Davis of the Food Research Institute has recently argued against this application of the principle on the ground that it is not possible to determine how much offset the unprotected industries should have. A sufficient answer is that a very rough approximation will serve much better than nothing. A fairly safe measure of the amount of offset that the unprotected commodities as a whole should have is the amount which the prices of the protected commodities as a whole are raised.

The exponents of the export debenture plan have also justified the use of the customs revenues to pay the bounties on the ground that many of the tariff duties are higher than would yield the most revenue, which means in effect that customs receipts have been reduced to subsidize an industry. This is also a valid argument as far as it goes. It furnishes all the precedent needed so far as the principle is concerned.

CHAPTER X

THE DOMESTIC ALLOTMENT PLAN

The essential principle of the domestic allotment plan is paying producers a free-trade price plus the tariff duty for the part of their crop which is consumed in the United States and this price without the tariff duty for the part of it that is exported, this to be arranged by a system of allotments to individual producers of rights to sell the domestic part of the crop in the domestic market.

Two important advantages are gained by such a plan: first, the stimulus to further production for export characteristic of the other plans is largely if not altogether removed; and second, for this reason, foreign countries cannot object to it on the usual grounds of their objection to export bounties, or raise import duties to meet it as they can with a specific export bounty.

Two such plans have been suggested independently of each other and have received some discussion. Dr. W. J. Spillman of the United States Department of Agriculture had his version of the plan presented in preliminary form on Feb. 1, 1926, by Harry N. Owen, editor of *Farm, Stock and Home,* Minneapolis, in an article in that journal called "Getting the Tariff to the Farmer," and published his final version of it in January, 1927, in a little book called "*Balancing the Farm Output.*"[1] He called it a "limited-debenture" plan. The other plan, hereafter called the "transferable-rights" plan to distinguish it from the other by its most essential feature, is published for the first time in this chapter. The several persons who have discussed this plan and have worked it into its present form are not sponsors for it, or advocates of it, in the sense that the authors of the other plans mostly are. They think, however, that it represents a contribution to the problem, and should be considered along with the other price-raising plans. Dr. Spillman's plan will be mentioned in the analysis following wherever it differs from the transferable-rights plan. Dr. Spillman proposes to apply his plan to all classes of farm products, whether crops or livestock, whether cash crops or feed crops, whether exports exceed imports or *vice versa.* Question is here raised as to whether either of these plans can be applied to all farm products; and the conclusion is that in any event they should be applied only to wheat and cotton until their possibilities and limitations are proved by experience, and the necessary technique for their application to other products is better understood. The analysis following is worked out most thoroughly for wheat.

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[1] Orange Judd Publishing Co., New York.

THE ALLOTMENTS

The most essential and probably the most difficult feature of the allotment plans is the determining of the allotment rights to individual producers. Following are discussed the various phases of it:

Size of Total Allotment.—According to the transferable-rights plan, the allotment is to be equal to the total consumption by domestic mills using wheat, less the wheat equivalent of wheat flour and other wheat products both exported and imported. It would not include wheat used for seed or feed on the home farm or sold to other farmers for seed or feed anywhere in the United States. It will appear later that this plan would cause more high-quality wheat to be imported from Canada than at present, and the amount thus imported might be subtracted from the allotment; and likewise any possible imports of flour.

Who Determines Total Allotment.—Department of Agriculture and Department of Commerce; or a committee consisting of one chosen by each and a third designated by the two.

Individual Allotments—How Made.—*A.* Have the Division of Crops and Livestock Estimates determine wheat "quotas" for each state, county, and township, using as a basis: (*a*) reports in its files and in files of cooperating state agencies; (*b*) federal census data for 1910, 1920, and 1925, including township summaries, which can be worked up by the Census Bureau at small cost; (*c*) state census data where available. Yields are even more important than acreages. It is assumed that the yields of the three census periods combined with the data in the files of the crop-reporting service will furnish the basis for yield estimates that will be sufficiently close to the truth. The Division of Crop and Livestock Estimates is an impartial agency removed from any local influences, its men trained by experience in the making of objective decisions; and it has access to all the data available.

B. Have an "Allotment Commission" in each wheat-growing state which will be finally responsible for the individual allotments. Its personnel might properly include the following: the state commissioner of agriculture as chairman; the state statistician of the crop and livestock reporting service; an economic statistician, preferably from the state, but designated by the Federal Farm Board to be described later; a representative of the state tax commission, since the tax rolls may need to be used in checking up the lists of producers; possibly a representative of the Federal Farm Loan Bank in the district, since it is highly probable that the information needed for allotment purposes could be highly useful to this bank.

This Commission will have for its first task the collecting for every wheat grower in the state of the information as to his acreage, yield and production of wheat that is needed for determining his fair and proper allotment. This information is: (*a*) acreage of wheat planted and harvested on his farm in each of the last 5 years (3 years will do if necessary, but five or even more are desirable); (*b*) yield for the same years; (*c*) sales for the same years. It will be advisable at the same time to secure similar data for other crops and for livestock if there is a possibility that this or some related plan may be applied to them or that such information would be useful in forecasting production and in plans to stabilize production.

Several methods have been proposed for collecting this information, the two most feasible being as follows: (*a*) make a canvass of all farmers in the wheat-producing areas. The objection to this is the expense. It would probably cost less than $100 per township if the inquiry were limited mostly to wheat. (*b*) Have all wheat growers report at a convenient point to register for their allotment and at the same time provide the supplementary information.

The information thus obtained should be published in local newspapers so as to give anyone a chance to protest. Also it would be advisable to consult the records of local elevators and threshermen to obtain checks on the reports obtained from the individual growers, especially for the earlier years. A difficulty will be that in many cases the present grower will not have been on his present farm for 5 or even 3 years.

The state Allotment Commission will then determine according to some method which is as mechanical as possible, the allotments for each farm, publish these in the local newspapers, and make adjustments when complainants furnish evidence that a mistake has been made.

When Made.—For spring wheat, in January each year, so as to give the growers a chance to make their plans for the coming year and make ''intention to plant'' reports to the Department of Agriculture in time for the February outlook report; for winter wheat, in June or July. An alternative plan is given at the end of the chapter.

To Whom Assigned.—To the person operating the farm for the year, or in the case of rented farms, to landlord and tenant jointly. The allotment rights are the property of the farm, and not to be taken to another farm, except when sold in the manner indicated later. They are issued each year anew. This means that persons leasing farms must consider the allotment rights in the transaction.

Revision of Allotments.—The individual allotments for the first year will continue for the second and third years except for revisions that seem highly necessary on the basis of accumulating records of the individual farms. The first receivers of wheat (local elevators, etc.) will make a record in triplicate of all wheat received and give one copy of same to the grower and one to the Allotment Commission. Certain other data as to crop acreage, legal or other description of land on which grown, and carryover, may also be needed. Shifts in production which appear in these records will be taken account of in the revisions, especially in the third year and following. The total allotment will continue the same except for changes that seem warranted on the basis of experience. It is important that the total allotments be not increased unless increase in domestic consumption justifies it.

Transferability.—The allotment rights are to be transferable. A farmer who has a very poor crop can sell them and realize a return from them which will compensate him somewhat for his loss of crop. It is expected that there will be a market for the rights in which they will sell for approximately the amount of the tariff duty, 42 cents per bushel at present.

Not only are the rights to be transferable, but transferable at once when issued. The grower receiving them can sell them in the market for rights and get his money for them at once. Probably he will be able to sell them at a local bank. They will always sell at discount any time before the end of the year because they are to be non-interest bearing. They may thus become advances to growers before the planting season which can be used in financing the growing of crops. The rate of discount will not be the rate prevailing at local points, but at central financing points where the rights will presently accumulate in quantity. The local banks can carry the rights themselves or have them rediscounted. The plan thus provides production credit which will be of great aid to growers in many sections, and especially in the South if it is applied to cotton. Grower's not needing the credit, however, will probably not sell their rights, because they will be becoming more valuable as the harvest approaches.

It has been objected that persons receiving these rights may cash them at the bank and never produce the wheat. This is true. But if an owner does this, he will have no receipt of sales to show and he will presently have the allotment for his farm reduced. And apparently it will behoove the landlord to see that his tenant does produce a crop, since otherwise his farm will suffer the same fate. It is for this reason that the plan suggested above of having the rights issued jointly to landlord and tenant, the landlord having a claim on them till the crop is delivered, would seem to be desirable. As before stated, leasing arrangements will need to provide for this new system of payment for crops.

It has also been stated that all that a farmer will need to do to avoid the penalty of loss of rights is to buy some wheat of his neighbor and deliver it. There are two answers—one that his neighbor will want to sell his own wheat so as to get credit for it on the records, and the other that the record made by the local buyer will always have to specify the land on which the wheat was grown.

Application to Sample Townships.—A township in McPherson County, Kansas, may be taken to illustrate an extreme degree of wheat growing. The acreage in 8 years on 123 farms, from 1921 to 1928, has ranged from 9,864 to 13,704; the yield per acre from 8.9 bushels to 17.6 bushels; the production from 107,000 bushels to 221,000 bushels. The average acreage for all 8 years is 11,881; the average yield, 13.5 bushels; the average production, 160,000 bushels. If the problem were to obtain the township quotas from these data, and the last 5 years' records were available, the quota would be based on 170,000 bushels, consisting of a 13.7 bushel yield on 12,370 acres. If the last 3 years' records only were available, the quota would be based on 180,500 bushels, consisting of a yield of 14.7 bushels on 12,520 acres. The last 2 years only would give a yield of 17.5 bushels, an acreage of 11,930, and a production of 207,600 bushels. The acreage for the last 2 years of the period has averaged 11 per cent more than that of the first 2 years, indicating an upward trend in production. If the 2 years 1921 and 1926, 5 years apart, nearly the same as available in the federal census figures, were used, the acreage would be 11,784 and the yield 9.8 bushels, a very low quota.

In a township in Norman County, Minnesota, the wheat acreage on 87 farms has ranged from 1,506 to 2,777, the 5-year average being 2,288, with an equally pronounced downward trend. In a township in southern Minnesota, 111 different farms have at one time or another grown a little winter wheat, the largest total acreage in any one year being 136, and the smallest 64. If the average acreage of the first and last of the 5 years were used, the quota would be based on 1,948 acres for the first township, and 120 acres for the second. No yield data are available in the assessors' reports in Minnesota.

If these same data are analyzed from the standpoint of being used in individual farm allotments, the same general conditions appear but in more pronounced form. Of the 123 farms in the Kansas township, 61 appreciably increased their wheat production, and 42 appreciably reduced it, during the 8-year period. The increases were over 100 per cent on 22 farms. Individual farm yields as well as acreages fluctuate more than the township averages. Of the 3-year average productions of 123 individual farms, 51 showed deviations of over 70 per cent from their 8-year averages; but all except four of the 5-year averages were within 70 per cent of their 8-year averages.

These samples indicate that the job of making allotments is by no means simple even with the best of the data at hand. But it by no means seems hopeless. Wheat growers would submit to unfairness in allotments much more gracefully than they submit to unfairness in tax assessments, to which they are subject constantly.

THE PRICE MECHANISM

The device in the transferable-rights plan for forcing the domestic price to the level of the world price plus the tariff is to require all processors of wheat to show the allotment rights above described, for all domestic wheat milled and sold as wheat product in the domestic market. They will buy up the allotment rights as they are turned into the market by the growers and as they need them, as far as these are available, and import actual wheat, paying the 42-cent duty upon it, if not enough allotment rights have been issued. If more allotment rights have been issued than the millers need, imports will cease altogether and the allotment rights may sell at a slight discount. Except for this possible discount, the rights will sell for the amount of the customs duties, except for the further discount which they will be subject to prior to the final disposal of the crop, and except for one other important circumstance to be mentioned later.

Since the millers will not buy rights for more wheat than they can dispose of as flour and other wheat products in the domestic market, the remaining wheat will have to seek another market, which will be mainly for export as wheat and flour, but to some extent as feed and seed for domestic use. The price of this wheat will, therefore, be determined by the export market. Special supply and demand conditions for feed and seed types of wheat may give these a price somewhat above or below the export level for milling wheat.

It is assumed that actual wheat moving in the market will be priced on the export basis for the most part; but that convenience in market transactions may induce dealers to buy rights and attach them to the bills of sale now used in the exchanges as evidences of ownership. Some growers may sell them with their grain at the local elevators. If so, then there will be grain both with and without rights being bought and sold in the exchanges, and quotations will be made accordingly.

If the rights are not attached to the bills of sale earlier, then the miller will buy them and attach them. Bills of sale with rights attached will be the miller's evidence to public officials that he has in effect paid approximately the 42-cent premium on the wheat.

It is expected that the market for rights will be somewhat speculative, actual prices of them reflecting credit conditions as well as supply and demand for rights themselves. A highly fluid market for these rights is much to be desired, and speculation will contribute to this fluidity.

The foregoing mechanism will leave the miller in a highly desirable position so far as securing the particular lots of wheat which he wants for milling. He will always be able to buy wheat and rights separately.

As for imports, it is expected that it will be cheaper to buy domestic wheat than imported wheat in most locations because of the saving in transportation costs. The plan means that the same quality of wheat can be bought for the same price, 42 cents above the world price, in the two countries, except for differences in transportation and handling costs. The miller in Kansas City, for example, will not pay freight to Canada plus 42 cents for Canadian wheat when he can buy southwestern wheat for 42 cents plus freight from southwestern points. There will be some milling points, however, for which Canadian wheat may have an advantage in location, Buffalo, for example. Any wheat which is imported by United States mills for reason of this kind, or the wheat equivalent of any flour, will have to be deducted from the total allotment of rights. It is difficult to forecast what amount might be imported under these circumstances, possibly as much as 25,000,000 bushels. Under the unusual conditions prevailing in 1920 to 1921, and with absolutely no duty on wheat, the imports were 58,000,000 bushels. The mills so located as to take advantage of this situation might expand a little at the expense of those not so situated. They could then mill a certain amount of Canadian wheat for the nearby domestic market as well as in bond for export.

If it proves advisable to stop imports of flour under these circumstances, it can be done simply by increasing the protective duty on the ''conversion cost''—a practice, which, however, has some undesirable accompaniments.

Differences in quality of wheat may also become a reason for imports. It is expected that the mills wanting high-protein wheat will use up the domestic supply of this first, purchasing rights to cover it, but that as soon as higher-protein wheat can be obtained in Canada, they will prefer to pay 42 cents import duty on it than to buy rights to use lower-quality domestic wheat. This may depress the price of the rights somewhat below the 42 cents level as long as the supply of rights lasts, or lessen the domestic premium on high-protein wheat, and even cause more high-protein wheat to be imported than at present if the millers have advantageous uses for it. Domestic wheat of any quality will always have the option of the domestic market over Canadian wheat of the same quality, except at milling points nearer to Canadian sources of such wheat; but if the domestic supply runs short or is of poor quality some year, imports will set in.

This feature of the transferable rights plan has already been discussed in principle in connection with the equalization fee and export debenture plans in the two preceding chapters. The basis of it is a domestic price level equal exactly to the import duties. As already explained, the German import-certificate plan is designed with the deliberate intent of encouraging imports under the foregoing circumstances, but offsetting them with equal exports.

To the extent that producers of high-protein wheat in the United States are getting a larger premium than they would without the present tariff duty on wheat, they will not gain as much from this plan as will the producers of lower-grade wheat. It is highly probable, however, that the 42 cents per bushel on their allotment will add more to their incomes than does the present customs duty. The present duty on wheat has been effective for probably not more than 5 cents per bushel on the average since 1924; and in Montana by possibly as much as 10 cents per bushel. The allotment system would apparently add around $200 to the selling price of each 1,000 bushels of wheat, assuming a total allotment of 400,000,000 bushels. In addition, there would be a saving in interest cost through the low rate at which the rights would be discounted.

A method of handling this matter of quality differences, if it seemed serious enough to require special handling, would be to set up a different tariff rate on durum, white, and club wheats, and on hard wheats according to protein content. Samples of wheat imported could be analyzed very quickly and at small expense and the tariff rate assessed accordingly. The higher rates on the high-protein wheat would preserve for the producers of it the relative advantages from the present tariff. In the years when the high-protein content brought no premium, the higher tariff rates on it would simply not be effective.

It might seem proper to some that the total allotment quotas and individual allotments be determined separately for the principal classes of wheat, since the domestic consumption of some varieties of wheat is much larger in proportion to their production in the United States than for other varieties. For example, only 4 per cent of the 1927 hard spring wheat crop was exported, compared with 16 per cent of all wheat, 27 per cent of the durum wheat crop, 32 per cent of the production of white wheat and 20 per cent of the hard red winter wheat. To differentiate in this way would assume that there is some special merit in producing a type of product of which we have a small export surplus, because of a limited amount of suitable soil and climate, etc., as compared with producing one of which we have a considerable surplus, because of a large supply of suitable soil, climate, etc., which entitles the producer of it to especial consideration in a program of agricultural betterment. Most people will agree that there is no special merit in such production. (Those whose whole theory of agricultural betterment is self-sufficiency and production for home market only, naturally will not agree.) Moreover, making this differentation would probably cause wheat production to shift somewhat to the areas where the allotments were relatively large and thus disturb unnecessarily by artificial means a natural balance of wheat production according to types. The quotas would need constant readjusting, and other administrative difficulties would be increased. Equal percentage allotments would mean that all wheat growers would benefit equally regardless of type of wheat produced.

The arrangements for milling in bond and drawback could remain as at present.

BASIC ECONOMIC PRINCIPLES

The economic principles basic to the operation of this plan now begin to stand out. *First of all, it is a plan which "makes the tariff effective" in a more direct sense than do the other plans. The allotment rights are worth an amount per bushel to the grower which equals the amount of the tariff duty, except for the discounts and transportation and quality differentials above mentioned. The plan simply gives the tariff rate a chance to impose itself on the whole of the domestic consumption.*

Second, it leaves commerce in the commodity on a free-exchange basis *so far as transportation advantages and quality differences are concerned.* Millers of the United States will be using more Canadian wheat from points nearer at hand and of the qualities they need; and in turn the nation will be exporting more wheat which is near to export points, or which is of export types and quality. The saving to the miller, to producer and consumer from shorter freight hauls and better choice of quality, will amount to considerable in the aggregate, much more than most people suppose.

No doubt some will object to the plan in advance, and many more after it goes into effect, on the score of the imports which it allows up to a certain point. It is true that the larger these are, the smaller the allotments will be. The imports will expand quickly up to a certain point and then stop except for a normal growth. The importations that do occur will depress prices a little near the points of entry, and growers selling at these markets may tend to look at these lower prices and forget the larger amounts they received from the sale of their allotment rights. They have been so long in the habit of looking upon competing goods from abroad as a menace that it will take them some time to get over it. Differentials for high-protein wheat may also be reduced a little and the producers of it may also be inclined to forget the larger income from their allotment rights. If these objections proved insurmountable, the imports due to quality differences could be checked by amending the tariff schedule as indicated.

Or a still simpler proposal would be to require the board to invest in allotment certificates the duties collected on imports as fast as they came in. This would make it possible to issue allotment certificates for the amount of the imports as well as the part of the crop both produced and consumed at home. If this feature were adopted, an increase in imports would cause no trouble whatever. A similar proposal is that the import duties collected be used to pay export bounties as far as they would go. The former plan seems preferable, and would attain its ends entirely.

Third, it accomplishes its ends simply by passing on to the consumers the cost of the higher prices which the producers receive, just exactly as does any effective tariff. It is even like a customs system in that it collects revenue for the government from whatever imports ensue. It differs from a system of customs duties in that it still permits transportation advantages and quality differences to be realized, and hence is not so destructive of revenues as are protective duties, nor as wasteful of resources through cross-hauling.

Fourth, this plan combines the raising of revenues for the government and assistance to the producers of a commodity in almost the same manner as does a protective tariff duty. It is a right to sell in a protected domestic market which is granted the producer the same as under the tariff system. It would scarcely seem probable that the plan could be declared unconstitutional for reasons pertaining to any of these named features.

METHOD OF FINANCING

The board could issue allotment rights for slightly less than the domestic consumption, and sell the remainder directly to the millers or in the open market for rights that would develop, and thus obtain all the operating income needed. The increase in imports would add somewhat to customs receipts.

APPLICATION OF PLAN TO THREE WHEAT CROPS

Production of wheat in the United States for the 3 years 1925 to 1928 has averaged 793,053,000 bushels; production plus carryover, 914,188,000 bushels. The disappearance as flour for domestic consumption has been 501,023,000 bushels; for seed, 88,000,000 bushels; for other uses, principally feed, 35,811,000 bushels. The equivalent of 34,000 bushels has been imported as flour, and 1,012,000 bushels have been imported as wheat not in bond.[2] Exports of wheat have been 121,965,000 bushels as wheat, and 56,162,000 bushels as flour, or a total of 178,127,000 bushels including exports of wheat under bond. Imports under bond averaged 13,886,000 from 1925 to 1928, leaving net exports of 161,197,000 bushels.

If no increase in exports were to occur under the proposed plan, the allotment could be well toward 500,000,000 bushels, assuming that the present tariff schedule maintains. Subtracting 25,000,000 as possible imports under the plan, and allowing an equal amount as a margin of supply, would leave 450,000,000 bushels as the size of the allotment. If 40 cents were the average increase in price on the allotment wheat, the growers of a crop like that of 1925 would have received an average increase in price per bushel for all wheat sold for use in flour or for export of 26.6 cents. A comparable figure for a crop like that of 1926 would be 21.7 and for a crop like that of 1927, 20.6 cents.

If the imports of wheat could be cut in two by a scale of tariff duties according to type of wheat and protein content, the allotment might be raised 25,000,000 bushels and the above figures would be 28.1, 22.9 and 21.9 cents per bushel, respectively.

ADMINISTRATIVE PROBLEMS

The weaknesses in the plan from an administrative point of view other than those of making the allotments at the start, already described, are as follows: (*a*) some growers may try to increase their allotment by falsifying reports and records; (*b*) local buyers may not make purchase records with sufficient care; (*c*) millers may conceal evidence of purchase of wheat, and of production and sale of flour to brokers, etc., thus saving the cost of purchase of rights. Conceivably, a grain dealer and miller might enter into a secret agreement to conceal a transaction; or a miller and dealer in flour. (*d*) Milling for local consumption in remote districts might develop to a small extent—"moonshine" flour might become a subject of conversation. The internal revenues have not caused troubles of this kind with tobacco, and they probably would not with wheat.

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[2] Drawbacks were allowed on an average of 35,397 bushels and the equivalent of 5,124 bushels of wheat as wheat flour from 1925–1926 to 1927–1928.

It does not seem that any of these difficulties are especially important in the case of wheat. Publicity of allotments will largely check the first two. Requiring the local buyer to make out his purchase record in triplicate as explained will largely handle the second difficulty. Bonding the millers and requiring uniform records and forms will largely control the third. It would hardly seem that any penalties are necessary except for the millers. If penalties for growers proved necessary, an appropriate penalty would be loss of allotment rights. The administrative machinery for enforcement of the plan would probably be the Bureau of Internal Revenue, which has already developed machinery for handling collections of revenue based on output in the case of tobacco, oleomargarine and other products. Monthly reports would be needed in order to observe the operation of the plan. Examinations of records could be made less frequently.

With the size of the total allotment determined as indicated, the quotas by the Division of Crop and Livestock Estimates, and the individual allotments by the state Allotment Commissions, and with the supervision of mills by the Internal Revenue officials, there is little else for a central governing board to do except to analyze the reports and statistics of consumption carefully and observe the working of the plan and its administration in the various states. This, however, would be a highly important function. Such a board should also be given a few matters of major policy to determine, and certain authority over the Allotment Commissions and other agencies.

The principal expenses would be connected with making the allotments the first year and assembling the purchase records and summarizing them. This information, however, would probably be worth all it would cost for other uses, such as crop forecasting, etc. A small additional appropriation would need to be made to the Division of Crop and Livestock Estimates.

The act would best go into effect just at the end of a crop season. The mills would need to be required to show rights or stamps for wheat milled from the day the plan went into effect.

INSURANCE ASPECTS

The transferable-rights plan, as already suggested, has some important insurance features. In the first place, any grower having a complete or partial crop failure will still have allotment rights to sell. Secondly, if the crop is large generally and prices low, the 42 cents added to his allotment part of it would cause a smaller proportional reduction in his price. The first is insurance against crop failure, the second against price decline. These are both illustrated in the following table in which four different combinations are assumed: a large United States crop and a large crop (8,000 bushels) for the farm in question, the same except a small crop (2,000 bushels) on the farm in question, and the same two crops on the farm in question in combination with a small United States crop. The grower's allotment is assumed to be 4,000 bushels, the effective tariff rate, 40 cents, and his average production 5,000 bushels with no change in acreage. The large and small United States crops are assumed to be the 1927 crop of 871,691,000 bushels and the 1925 crop of 676,429,000 bushels, respectively.[3] The price received by the farmer is taken as the average price received by producers Dec. 1, 1925 and 1927 estimated by the United States Department of Agriculture. Expense data are read from the table presented in Chap. IV.

A.—SMALL UNITED STATES CROP (1925) 676,429,000 BUSHELS, AT 141.6 CENTS PER BUSHEL

	(1) At present		(2) Under proposed plan	
Size of crop on farm, bushels	8,000	2,000	8,000	2,000
Sales value	$11,328	$2,832	$12,928	$4,432
Expense	3,960	3,660	3,960	3,660
Net income	7,368	− 828	8,968	772
Ratio of net income to expense	1.86	−0.23	2.26	0.21

[3] Since the price level in 1925–1926 and 1927–1928 was practically the same and wheat production in the Northern Hemisphere only 3.6 per cent larger in 1927 than in 1925, the prices received by producers should reflect quite closely the effect of difference in United States production.

B.—LARGE UNITED STATES CROP (1927) 871,691,000 BUSHELS, AT 111.8 CENTS PER BUSHEL

	(1) At present		(2) Under proposed plan	
Size of crop on farm, bushels	8,000	2,000	8,000	2,000
Sales value	$8,944	$2,236	$10,544	$3,836
Expense	3,960	3,660	3,960	3,660
Net income	4,084	−1,436	6,584	176
Ratio of net income to expense	1.03	− 0.39	1.66	0.05

These figures show clearly how insurance would be obtained when the grower had a short crop whether the United States crop was large or small; and also against a general price decline in years when the United States had a large crop. Under present arrangements, a grower with a large crop sees his net income fall from $7,366 to $4,084 if the United States crop is large; under the proposed plan, it would fall only to $6,584, if the grower disposed of his crops and rights in the usual way within the year.

If the wheat growers as a group were to sell their rights only, but hold various portions of their wheat until the year following, their gains and losses from this holding considered by itself would be the same as if there were no rights. They could not afford to hold their rights over until next year because they would depreciate in value just as wheat does when the new crop comes into the market; and since about the same number of new rights would be issued each year, there would be no chance of the new issues having a higher value than the outstanding ones. Hence, so far as weather surpluses are concerned, the principal effect of the plan would be that growers having a large crop might carry some of it over and cover it with the rights of the next year in place of growing new wheat. Any one contemplating reducing his wheat acreage would surely do this. Others would fear the effect of this on the size of their next allotment; but perhaps a way can be found of allowing for carryover in making the allotments. The other thing which the plan offers with respect to weather surpluses is the slight insurance against price decline already explained.

As to overproduction surpluses, the plan has the advantage of permitting a reduction within limits in the allotments as the production increases, and thus checking expansion if this seems desirable. If the overproduction period is developing in an important foreign country, however, this may have a very feeble influence on the world price level.

The principal way in which the plan may contribute to a more orderly marketing of the wheat is in the advancing of part of the value of the crop, thus making holding easier.

THE CARRYOVER

Although no rights are likely to be carried over, the wheat itself will be carried over the same as now. The grower will have to count in any wheat he has on hand when he makes his plans for his first year's planting after the plan goes into effect, for he will either have to sell it at export prices, as at present, or use some of his allotment rights for it in place of growing so much new wheat. He will have later carryovers to consider in the same way. If he reduces his new plantings because of this carryover, it will reduce his production over a 3- or 4-year period, and possibly result in a slightly smaller allotment following later, unless some way can be found for allowing for a certain amount of carryover in making the allotments.

EFFECT ON PRODUCTION

The effect of the allotment plan on acreage and production has been much debated. One's first reaction is that when the producer realizes that he will receive 42 cents less per bushel for all wheat over his allotment, he will not increase his acreage, but may even reduce it. But it is argued, on the other hand, that the 42 cents is in addition to what is now inducing him to grow his present crop, and will make the income from the whole crop so much more, and hence stimulate further production. Which of these is the more nearly right answer does not depend upon what is the correct answer for the grower, but upon how the growers will reason or react about it. A more reasonable assumption is that the growers will think in terms of what it will add to their expenses and to their incomes to grow wheat not covered by rights. There are certain expenses such as for machinery and horses, and storage space on many farms, which the farmer has already made, or will have to make, in most cases whether he grows one-fifth more or one-fifth less wheat. Machinery wears out a little more rapidly with somewhat larger acreages, but only a little. The growers will be inclined to overlook these costs and think of the costs that are more variable with output, such as gasoline, seed, twine, threshing, and harvest labor, and to compare these with the price for his wheat not covered by rights, and decide accordingly. Farmers always think in these terms more or less. The effect of the allotment plan will probably be to make them think even more in these terms, just as protective tariffs have made our manufacturers think in these terms, and frequently sell goods abroad for less than the domestic prices so long as the prices abroad have paid the variable costs—those other than the fixed or overhead costs. Moreover, the extra income from the 42 cents on the allotted wheat will permit the growers to invest in more and better machinery, which will be a further reason for increasing production. The advancing of production credit at low interest rates in the spring which the transferable rights plan provides for will probably have a stronger effect than the allotment part of the plan. But it seems probable that all this influence together will not increase production greatly, and will certainly increase it much less than the export bounty and McNary-Haugen plans.

Moreover, most of the increase which will accompany such a plan cannot be seriously objected to at home. The grower will realize in such a case that he is producing this extra output for the export market, to sell at export prices. If it is good economy for the manufacturers to practice such a policy, it is good economy for the farmer. The receiving countries, of course, have a right to legislate against it as dumping; and most of them do so legislate. But the dumping features of the allotment plan are not very important—much less important than those of the export bounty and McNary-Haugen plans.

An important feature of the transferable-rights plan is that it will not raise the price of wheat to those who want to use it for feed or seed in the home country. All wheat will move in the channels of trade at regular prices until, and if, either rights or revenue stamps are attached to it. Feed wheat will never be so attached. The export bounty and equalization fee plans would raise the domestic price level, the latter by the full amount of the tariff duty.

If a tariff duty of 42 cents really made effective came to appear too onerous a burden on consumers, it could be reduced somewhat and still mean more to the growers than the present duty. This would also simplify the problem of enforcement by reducing the urge to concealment.

APPLICATION TO COTTON

In many ways, the plan appears more applicable to cotton than to wheat. It would, of course, be necessary first to establish a tariff duty on cotton.

It might be advisable in establishing tariff duties on cotton to vary the rate according to the length of staple of the cotton. Otherwise, imports of the longer staples would be stimulated. The manufacturers would figure that if they must pay import duties on cotton, they had better get the best grade they could for the money; and their reasoning would be sound. Combining the transferable-rights allotment plan with the tariff duty would add a special stimulus to such imports because its basic principle of operation is to force exports out of the country to the point of raising the domestic prices by the amount of the tariff. The exports forced out under such circumstances would be of the grades of cotton least desired by our cotton mills, and better grades could be imported instead if they could be found abroad, unless the tariff duty was scaled to prevent it.

If the tariff duty was a flat rate regardless of staple, the plan would slightly favor the development of forms of textile manufacturing in the North based on the use of imported staples. If it did, the South could well afford to overlook it in view of the great gain it would derive from the higher price for the cotton covered by the allotment rights. It might well be deemed good national policy to let the mills import the better grades. It would encourage the development of textile manufacturing using such grades of cotton.

Saving in transportation would figure less in encouraging imports of cotton than of wheat because most of the competing supplies of cotton are at a considerable distance—not close like wheat in Canada. On the other hand, transportation costs are a smaller part of cotton values than of wheat values.

The great amount of cotton production by tenants and under crop liens will make especially important the matter of the person to whom the allotment rights are assigned. The arrangement previously suggested of assigning them to the tenant, but giving the landlord authority over them till the crop is delivered, and final ownership if the crop is not delivered, should work in this case the same as with wheat. But the matter must be handled so that the grower could get his production credit early in the season. This could be done by having the landlord make the advance to the tenant, which would be without interest, because the landlord would be getting his interest out of the appreciating value of the rights as the season advanced. Or the landlord could instead assign his equity in the rights to a merchant.

The interest realized from the possession of the rights would be at low rates compared with those prevailing in the South; for reasons already stated, they would be the rates at which this form of paper would be actually discounted. If local bankers or merchants were to undertake to exact higher rates, agencies would at once develop which would be glad to handle this paper at regular rates. All owners and operators would be able to cash in on their rights at once at these rates, and landlords and tenants would manage between them to secure the regular rates.

It is highly probable that the cooperative associations would take advantage of this new production credit, and that it would assist them greatly in setting up agricultural credit corporations for their members and by reducing the necessity of large advances to growers upon delivery of the cotton to the pool. It would also solve in considerable part their difficulty of crop liens on members' cotton.

The production credit feature of the transferable-rights plan as applied to cotton is of tremendous significance. Production of credit is more needed than anything else in the South. This plan provides a considerable amount of it with startling directness and simplicity, provided the allotment and other features of the plan are workable.

The insurance features of the plan will work out somewhat differently than for wheat, because the United States produces so large a part of the world supply, and the curve of net income from the cotton crop slopes downward rather than upward. The table following parallels the one for wheat given earlier.

An effective tariff duty of 5 cents a pound is assumed, 17,977,000 bales as a large United States crop and 13,628,000 bales as a small United States crop; and 6,000 pounds of lint cotton as a large individual farm crop, 2,000 pounds a small individual farm crop, and 2,000 pounds as the allotment to this farm.

A.—A Small United States Cotton Crop (1924) of 13,628,000 Bales at an Average Price to Producers December 1 of 22.6 Cents per Pound

	(1) At present		(2) Under proposed plan	
Farm production, pounds	6,000	2,000	6,000	2,000
Sales value	$1,356	$452	$1,456	$552
Expense	588	422	588	422
Net income	$768	$30	$868	$130
Ratio of net income to expense	1.31	0.07	1.48	0.31

B.—A Large United States Cotton Crop (1926) of 17,977,000 Bales at an Average Price to Producers December 1 of 10.0 Cents per Pound

	(1) At present		(2) Under proposed plan	
Farm production, pounds	6,000	2,000	6,000	2,000
Sales value	$654	$218	$754	$318
Expense	588	422	588	422
Net income	$66	−$204	$166	−$104
Ratio of net income to expense	0.11	−0.48	0.28	−0.25

With a short crop in general and high prices, the plan would insure the farmer against loss to the extent of $25 a bale on the four-bale crop assumed as a short crop for him, but would add only $8.25 a bale to the price of his crop if he were so fortunate as to have a twelve-bale crop on his farm. The price of cotton falls so low when there is a very large crop that even the help obtained from the plan would not prevent a loss if an individual grower happened to have a poor crop that year.

The plan may increase production of cotton more than of wheat because of the greater significance of the credit advance at planting time. It may cause more fertilizer to be bought, and in later years, more machinery. Cotton labor is more largely family labor, which partakes of the nature of fixed costs.

Since our own production is so large a part of the total, reducing the allotments would no doubt have a significant effect in checking increase in cotton acreage if a period of overproduction surpluses threatened.

Cotton production has been shifting rapidly of late; and if mechanical picking develops in the near future, the shifts will be even more pronounced. Unless the allotments are carefully handled, this shifting may be hampered somewhat. In general, however, the transferability of the rights takes care of this difficulty.

Most of the other administrative features of the plan will be as easy to handle as for wheat. There will be fewer small mills to supervise, and there will be no uses of cotton comparable to those of wheat for feed and seed. The checking of purchases of cotton against output of cotton products at the mills will be more difficult. The separation of the manufacturing operations between spinning, weaving, and clothing plants further complicates the same problem. The plant which converts the raw cotton into its first product is probably the only one which will need to be supervised. But some mills carry the product through two or three stages. Computing the raw-cotton equivalent of imports of cotton goods would be difficult; but high accuracy is not needed for this—the safety margin can be made large enough to cover possible errors.

APPLICATION TO CORN

The transferable-rights plan could not be applied to corn alone because nearly all of the corn is fed, and feed corn like feed wheat could not be included in the allotment unless some method could be devised for checking up on all feeders of corn for all kinds of livestock using it—hogs, beef cattle, dairy cattle, poultry and horses and mules—clearly an impossibility. If the plan were to be used for corn, the allotment would have to be stated in a certain number of bushels of corn, representing the small quantity that is processed, plus a certain hundredweight on the hoof of hogs, plus a certain hundredweight on the hoof of beef cattle, equivalent to the slaughtering of these in domestic plants. The producer would sell his allotment rights as with wheat and cotton and be free as now to sell his corn or feed it to hogs or cattle. The failure to include corn fed to dairy cows and poultry would mean that producers would have corn to feed at export prices, and that consumers of these products would not be paying a tariff duty on them other than at present. There would be some resultant shifting of consumption from beef and pork to dairy and poultry products, which would cut down the possible allotments on corn, hogs and beef cattle.

Probably all of the foregoing features are capable of being administered, although perhaps with a little more difficulty than for the other two products. But not so the slaughtering. Available statistics indicate that in 1927, 2,980,000,000 out of 10,710,000,000 pounds of pork, and 2,200,000,000 out of 7,480,000,000 pounds of beef, were slaughtered outside of government-inspected establishments. These establishments were inspected in fiscal year 1927 at a cost of $5,034,810.07. An increase in expenditure for it would make it possible to include smaller and smaller establishments. But it does not seem likely that it would ever reach a majority of the local butcher shops which do more or less slaughtering. All meat not reported would escape the tariff duty in full. Even if the act were enforced against local meat merchants, peddling meat by farmers would be greatly encouraged. ''Moonshine'' meat would appear in every rural community. It might be argued that it would not be necessary to include the purchase of rights to cover local slaughterings, that the reduction of allotments resulting would not be a serious matter. But the encouragement to local uninspected slaughtering which would follow would not be at all desirable; and the established meat packing interests would surely have cause to complain. If the plan were ever applied to corn, the latter procedure would be preferable to trying to enforce purchase of rights by local butchers.

APPLICATION TO OTHER PRODUCTS

The limitations of the transferable-rights plan are now becoming apparent. It could be applied satisfactorily if at all only to those commodities which largely or almost altogether pass through processing establishments where their purchase can be checked. If it were applied to butter, the farm and home manufacture of it would not be reached and would be stimulated. It cannot be applied to feed crops that result in no processed product, nor to those which contribute to meat animals, for the reasons mentioned. If it were applied to canned or evaporated fruits and vegetables, it would in some cases unwisely stimulate the use of these in their fresh forms. Peas and prunes seem to be two cases in which it could be applied. It could not be applied to potatoes or to apples. It is conceivable that it could be worked with oranges and lemons by checking at the packing plants or with the transportation agencies. The only leaks would be of a limited extent right near the orchards. No doubt it could be applied to some of the types of tobacco, if it were considered advisable for other reasons, since all tobacco processing plants are already under rigid supervision. A difficulty would be that the domestic consumption of the types of tobacco exported is in some cases very small, and the domestic allotments would be insignificant. There would be no object in substituting this plan for the import duties on wool, sugar and flaxseed—it is distinctly more difficult to administer than an import duty system. If an import duty is effective only to a limited extent, as in the case of butter, this plan would make it fully effective if it could be made to operate.

SUMMARY: ADVANTAGES AND DISADVANTAGES

As compared with the other plans based on the export surplus, the domestic allotment plan has the following advantages when applied to wheat and cotton:

1. It would stimulate less increase in production, and what it did stimulate would be upon a better economic basis.
2. It would provide an important source of credit for production and marketing at a low rate of interest.
3. It would provide some insurance against crop failure and price decline from large crops.
4. The raw product would move into the channels of trade at regular world price levels except for transportation and handling differentials.

5. As a result of the above, domestic users of the product for feed and seed would not pay the import duty; and users of the products resulting from the use of the feed would escape the import duty effects that would arise therefrom.

6. It would interfere much less with trade movements as to volume, types of product, and direction than the other plans. It would be less objectionable to importing countries of our products. So far as the exporting countries are concerned, it would be preferred to our import duties. It would hurt the Canadian farmers less while helping our own farmers more.

7. The plan finances itself at no more cost to the consumer than the equalization-fee plans; but at somewhat more cost to the consumer than the export-debenture plan, if the consumer under the latter plan did not have to pay other sorts of taxes to compensate for the drain upon the revenue of the government.

8. Applied to wheat and cotton, it would be more difficult to administer than the equalization-fee plan only as to the making of the allotments; and probably easier than the fee plan in some other respects. It would be much more difficult to administer than the export-debenture plan.

9. The principal argument against it, aside from the general argument of raising the cost of living, is the difficulty of administration and revision of the allotments, and the invasion of the private business of the processors; and a certain amount of non-enforcement. The substitution of somewhat arbitrary control for more or less free determination of production may also appear as an objection.

10. The fact that it can probably be applied to only two major products at this time at least will be counted an objection to it. The Corn Belt farmer will want to know how he will benefit from it. One answer is that the tariff system reaches some of the products, that this covers two or more of them, two very important ones, and that some way will presently be found to provide for the rest.

11. A related objection will develop when some of the farmers not now growing wheat will want to grow it and will ask for an allotment. They will consider that giving an allotment to a neighbor just because he was growing some wheat at the time is not equitable treatment.

DIFFICULTIES AND ALTERNATIVES

The most serious of the difficulties confronting the transferable-rights plan is that of revising the allotments without stimulating acreage increase. It is claimed that if the grower in the old producing areas knows that his allotment is going to be revised in 5 years on the basis of his production record, he will be sure to maintain at least his present production; and that in sections where economic conditions make even production for export profitable, there will be an expansion; and that the combined effect will be an expansion of production. There will even be shifts stimulated by the desire to share in later allotments. Probably more farmers will presently be found growing wheat and eventually sharing in the allotments. Farmers in Kansas and Nebraska will grow more wheat and less corn.

With fixed allotments, growers in old areas where population is declining would feel safe in cutting their production, and the declines in such regions would offset the gains in the newly developing areas; and the net effect would be constant production. With fixed allotments, growers would also feel free to hold over portions of their crops till next year. The allotment problem would also be simplified in many ways. No records of receipts and production would be needed and, hence, there would be no such records to falsify.

The reasons for providing for revision of allotments in the statement of the plan are as follows:

1. It will be impossible to make an equitable allotment at the start, and 3 to 5 years of experience and records will provide the basis for correcting mistakes made in the original assignments.

2. There would be an increasing number of cases of farms receiving wheat allotments, but producing no wheat; and these would come to be looked upon as bonuses or subsidies to individual farms. The psychological effects of this would not be desirable.

3. Shifts in production within the established farming areas are constantly going on, and they should not be checked. There is too much lag in readjustments as it is.

4. Land now out of cultivation temporarily, as a result of foreclosure proceedings and the like, would be penalized.

5. Lastly, and most important of all, it is doubtful if the plan would work as intended if revision of allotments was not provided. The present growers would simply accept their allotments as bonuses and go ahead producing as at present, except as the bonuses might improve their financial status. *Some sort of tie-up between future production and future allotments is needed if the essential idea of the plan is to be realized,* namely, a price plus the tariff on the domestic consumption and without the tariff on the export part of the crop. Make the allotments fixed on the basis of past records and this essential relationship ceases to exist so far as any future production is concerned.

If the allotments are revised, another objection to the plan is largely met, namely, that of injustice between different producers. If wheat is substituted for corn, then corn prices will rise and corn growers will share in the benefits along with the wheat growers. But wheat production will have expanded, which is not what the plan intends.

Obviously, the plan presents a dilemma on this point: change allotments and production will increase; fix the allotments, and a simple bonus on past production results. The latter might be justified as a bit of legislation to right the evils of the war and postwar period. But what is wanted is a mechanism that like the protective tariff can serve agriculture indefinitely.

Possibly a compromise can be discovered. One proposal is that only minor revisions to correct mistakes be made within the next three or five years, and following that, *revisions only of the township quotas* on the basis of evidence as to shifting economy of production as worked out by the Division of Farm Management in the Bureau of Agricultural Economics. *Individual farm allotments would be increased and decreased by uniform percentages within each township.* Certainly, this compromise arrangement would be safer at the outset than the one included in the description of the plan. If some township quotas were enlarged, others would have to be reduced. The result would be an influence to reduce acreage in some sections which would offset the increases in others.

Others have urged that allotments be based on the potential production of the farm rather than on the actual acreage. This would mean that farms in the Southern Minnesota counties which never grow wheat would get the same allotment as those which do. The basis of this proposal is that relief should be distributed to all farmers in the area, not just to those who happen to be growing wheat. This arrangement would decrease the average allotment per farm. The argument probably has merit enough to warrant basing allotments on potential acreage to a limited extent.

One of the agricultural leaders of the country believes that the plan could be worked with corn and hogs and beef cattle more successfully than above indicated. He says that only licensed persons should be allowed to sell meat anyway, and if they were all licensed, it should be possible for them to keep records of purchases.

Most have agreed that the plan handles the problem of different grades and types of wheat satisfactorily, that the millers could get the kinds of wheat they want, and the growers would get their allotments on a proper basis.

Some have stressed the point that the individual farmers will not be satisfied with their allotments; that it will be impossible to make them equitably on the basis of any existing or obtainable information. No doubt many complaints on this score will arise. But it seems reasonable to assume that growers would soon become reconciled to their allotments; or would furnish the commission with dependable data that would justify their claims. We submit to great inequities in tax burdens without seeing just where we are getting values in return. In this case, the values in return would be almost as tangible as hard cash.

THE SPILLMAN PLAN

The special feature of the Spillman plan is requiring the local buyer of the product to buy ''debentures'' at the full tariff rate from a ''commission'' through a local agent, usually a bank, for all the products bought, and having the commission pay an export bounty of the same amount on all of the products not covered by allotments. The growers would receive bonuses at the end of the year equal to the tariff rate on these allotments, less the cost of administration. The products would move in the channels of trade at the regular prices. No provision is included for transferring the allotments, and the whole plan is set up in such a way as to make shifts in production difficult. The paying of an actual export bounty would furnish an exact basis for tariff reprisals if important countries wished to make them. Supervising all the elevators and other small buying agencies out in the rural districts and compelling them to buy debentures would be much more difficult and expensive than supervising the processing plants. There would be the same inducement to concealment as under the transferable-rights plan. Both the production credit and the insurance aspects of the latter plan would be lacking. Paying the growers their high price in the form of a bonus check also has some obvious psychological and other objections.

Under the Spillman plan, the debentures, export bounties, and returns to growers could be for any amount less than the tariff duty, whereas under the plan outlined above, only the full tariff duty can apply. If lower bounties were named, then the stimulus to importation of high-quality and nearby wheat would be partly removed, which would be deemed an advantage by some.

Dr. Spillman believes that by requiring receipts for every transaction, and bills of sale, that the plan could be made to include feed wheat and feed crops generally, as well as livestock and livestock products. To the author, this looks like carrying supervision of private affairs, to prevent cheating the government, to a preposterous degree.

The first version of the Spillman plan published would have required the local buyer to pay the grower the amount of the tariff duty on all the products he could show allotment rights for, and to pay the ''commission'' the same amount on the rest, this latter to be used to pay an export bounty at the same rate. This would produce two markets at the country buying point, one at the tariff-plus level for allotment product, and the other at the export-price level. From this point on, all the the products would move at the tariff-plus level. Feed wheat would cost the feeder the tariff-plus price, unless farmers arranged to sell to each other and escape the buying of the debentures. There would be the same difficulties of administration. Exports would occur as under the transferable-rights plan. The administration would be financed by keeping the allotments a little low and retaining some of the export-bounty fund. The grower would get his bonus in the form of an extra price at delivery of his product, which obviously is a better arrangement for this than that in the later Spillman plan.

USE OF ALLOTMENT IDEA BY MILK PRODUCERS' ASSOCIATIONS

In 1923, the Maryland State Milk Producers' Association adopted a plan similar in many respects to the allotment plan described above; and several other milk producers' associations use plans that contain the allotment idea in principle. The Maryland organization has divided its milk supply into two parts, which it calls "basic" and "surplus." Basic milk is the quantity sold to consumers as fluid milk, and surplus milk comprises all the receipts above the basic quantity. The basic milk is sold at a higher price than the surplus milk because it supplies the whole milk demand, and the surplus milk is sold at what it will bring in dairy-product uses.

Allotments of basic milk were issued to individual producers equal to their average monthly production in October, November, and December from 1921 to 1923. Total receipts of milk during these months had practically equaled the consumption of fluid milk. These allotments were to remain practically constant from year to year. New producers were to be given an allotment only as the demands of the market warranted, and by vote of the association. New producers could be allotted 10, 20, 40, 60 per cent or more of their production as basic milk. If a member sold his herd, the allotment was to go to the new owner. If a producer's output of milk was less than his allotment, he received the basic price only for the amount produced. It would seem that under such a plan, high prices for basic milk should not affect the total production of milk, since any income above the basic allotment would receive only surplus price.

In practice, the plan has not worked thus far as was expected. Market demands for fluid milk have been increasing rapidly and new producers have been given allotments of basic milk very freely. Receipts in 1927 were 20 per cent above those in 1924. Prices have been maintained on a slightly higher level than in 1924. Obviously, the plan has not thus far received severe test. It may be thus tested in the next year or two.

While this plan resembles the domestic-allotment plan in its general feature and purposes, there are some important differences that need to be pointed out. First, the association has complete records of individual production for the past three years. Second, the producer receives no remuneration for production less than his allotment. Third, there is no protective tariff to raise prices in the local market. If prices are raised, it will be as a result only of taking advantage of monopoly of location and keeping production from expanding. Fourth, no forced collections from producers or processors need be made. The distributors have voluntarily agreed to pay the higher price for the basic milk. Fifth, the seasonal element in milk production is an important part of the problem of the milk producers' associations. It is as important for them to have enough milk to supply the local consumption of fluid milk in the autumn as not to have too much milk during the rest of the year.

The methods of the other milk producers' associations in some cases include allotments based on production in the autumn months, with a lower scale of payments on the additional production; in some cases, a scale of payments according to whether production exceeds or falls short of a basic allotment; and in other cases, simply a lower rate of payment on whatever milk has to be sold as surplus, in which the members share on some plan that tries to recognize the rights of the different groups of producers according to their location or prior claims in the market.

CHAPTER XI

OTHER PRICE RAISING PLANS

Next in logical order come two other plans in which is bounty is paid directly on exports and the funds for this are raised by a tax on the product. The first of these was proposed in the winter of 1926 by C. R. Noyes, at that time President of the St. Paul Civic and Commerce Association. He has called his plan an ''export-bounty excise-tax'' plan. The other is the Paterson or Australian butter-stabilisation plan, which has been in force since January, 1926.

The essential feature of the Noyes plan was to collect a sales tax from the farmers on all wheat, corn, hogs, and cattle sold by them and use the income thereof to pay an export bounty approximately equal to the tariff duty. The farmers were to pay the excise tax by purchasing tax receipts at the local post offices and delivering these with their product to the local buyers. All transportation agencies would be required to show these receipts along with their documents to a representative of the Internal Revenue Department stationed in the central markets before they could release the product for sale or storage. The price in the domestic market would rise the full amount of the export bounty, the farmers already having paid the tax. The net returns to the farmers would be the same as under the equalization-fee plan, except for possible differences in costs of operation. The principal advantage claimed by Noyes was that having the customs service arrange the exporting by the device of paying a bounty on it was a simpler and more direct procedure than that set up in the McNary-Haugen plan.

Noyes hoped at the time that he worked out this plan that he could get it accepted by the leaders in the Republican party and thus save it from alienating the support of the farmers in the Corn Belt and Wheat Belt. It reached the stage of being presented at hearings of agricultural committees of Congress.

It probably was in connection with this proposal that Vice-president Dawes became converted to faith in price raising by government action. The arguments against it were that it collected a tax directly from the grower, which would be difficult because there are so many of them, and that the farmer would be required to pay his tax before he got his extra price for his product, and that in consequence he might not realize that he was getting his taxes back and more. Much product would seek new irregular marketing channels in order to escape the tax.

The Australian plan operates like the Noyes plan, except that the tax is collected from the creameries and cheese factories instead of from the farmers, and the bounty is paid to the exporters by the ''stabilisation committee'' which has charge of the administration of the scheme. This procedure is possible because fully 90 per cent of the butter made in Australia is manufactured by cooperatives, and all of the cooperatives have combined to put the plan in operation. The plan is essentially a cooperative monopoly, but it has been authorized by the government, and in order to make it work successfully and keep out imports from New Zealand, the government has had to raise the duty on butter to 12 cents per pound. Only about one-fifth of the butter production of Australia is exported. The bounty paid at first was 6 cents per pound on butter and 8 cents on cheese. On Jan. 1, 1929, it was raised 9 cents per pound on butter. The tax collected during the first year was 3 cents per pound on butter, but 1 cent of this was afterward returned. It raised the price of butter in Australia by the full amount of the export bounty. From 1921 to 1925, Australian butter averaged 2.6 cents more per pound in England than at Sydney, Australia. If 1923, a year of low production and small exports is omitted, the average is 4.6 cents more in England than in Australia. Table 33 gives these data by individual years. From 1926 to 1928, the price of butter was 3.7 cents per pound higher in Sydney than in England. The change appeared at once after the plan went into operation, amounting to 5.4 cents per pound from December, 1925, to January, 1926 (monthly averages) and to 1.1 cents more by February, 1926.

The plan was made optional with the creameries; but obviously nearly all of them had to adopt it, since those which did would be taxing themselves for the benefit of the rest. The

450 out of 588 plants handling dairy products which signed contracts represented 90 per cent of the output of manufactured dairy products in Australia. A regular sign-up campaign was conducted, with contracts running for 1 year. Some of the creameries were opposed, but in such cases an appeal was made directly to the dairymen delivering milk to these creameries. In many cases the dairymen threatened to stop deliveries if the creamery did not subscribe to the plan. Contracts have been renewed enthusiastically each year since. The only other difficulty met as yet was the imports of butter from New Zealand during the first year. At that time the tariff on New Zealand butter was only 3 cents a pound, the same as the export bounty. The English market was poor during part of the year and Australia proved to be a better market than England. The tariff duty was then raised to 12 cents a pound on all butter imports. The plan has not been in operation long enough to observe its effect upon volume of production. The year 1926 was affected by severe droughts, which reduced the Australian supply.

TABLE 33.—PRICES OF BUTTER IN AUSTRALIA COMPARED WITH PRICES OF AUSTRALIAN AND OTHER BUTTER IN ENGLAND, BEFORE AND AFTER PATERSON PLAN WENT INTO EFFECT *

(In Cents per Pound)

		Prices Australian butter in Sydney	Prices in England		
			Australian	New Zealand	Danish
Before	1921	43.0	50.9	48.7	56.0
	1922	38.7	39.7	41.6	44.2
	1923	46.0	40.1	41.6	42.8
	1924	36.3	41.2	43.4	47.0
	1925	35.1	39.9	41.6	46.6
After	1926	40.1	36.7	37.5	40.1
	1927	41.8	36.9	37.3	39.9
	1928	39.9	37.1	38.9	41.8

* Annual average of monthly averages, compiled by Division of Statistical and Historical Research, Department of Agriculture.

EXPORT MONOPOLIES

A number of attempts have recently been made to raise the price of some one farm product of which the country has a near monopoly by controlling the export of it. The general plan followed has been to collect a tax on the product delivered for export and use the income to finance a program of storage and feeding the market. The Brazilian coffee-valorization scheme is well known. We can learn more by studying the efforts with sisal in Yucatan. This industry has experienced great vicissitudes in the past 20 years. The New York price has fluctuated from 4 cents per pound in January, 1913, to 19 cents in January, 1918, to less than 5 cents a pound in October, 1921, to 8 cents and above in 1924. Prices to growers were as low as 2 cents a pound for a period in 1921. The prewar average price was between 5 and 6 cents a pound. There are three reasons for this recent instability in the sisal industry. The first is that sisal growing, like coffee growing, sugar growing, and rubber growing, lends itself to capitalistic organization for the quick exploitation of virgin resources, resulting in frequent periods of overdevelopment and low prices. In the second place, the war prices of 1918 and 1919 caused overexpansion and large surplus stocks in 1920 and following. The accompanying low prices discouraged new planting and caused a large acreage of old plantations to be neglected. A sisal plantation that is neglected degenerates very rapidly, and can be only partly revived. Hence, prices are likely to be relatively high for some time afterwards. In the third place, the various attempts at government and monopoly control have accentuated some of the foregoing effects—just how much being a question that cannot be answered.

The sisal control program began in 1912 when the Yucatan legislature promulgated a decree creating a "commission for the regulation of the sisal market," whose objects were to free the growers from the control of the foreign capitalists who, by cooperating closely with the Diaz régime, had managed to get the growers heavily in debt to them; to set up marketing machinery of their own to handle the crop and feed it to the market only as fast as it was needed, to find new markets and new industrial uses; and thus to raise the prices and maintain them on a basis profitable to producers. This commission was to be financed by loans and by a tax per kilo of sisal which all growers were to pay. This commission never really got going. The tax did not provide funds rapidly enough to buy up the large surpluses of these years. It continued in existence, however, and in 1915, General Alvarado, sent to Yucatan as provincial governor by Carranza, revised the act and put the plan upon a more secure basis. The government entered into a contract with each grower in which the grower agreed to deliver his sisal to the commission for sale, and the commission in turn agreed to deliver to each grower a bond secured by the assets of the commission representing the amount of tax deducted to support the commission. In this way, the capital was built up to $50,000,000. The American buyers were thus forced to buy from the commission.

This plan came under review of the United States courts in 1918. Judge Hough dismissed the case on the grounds that the growers themselves had entered into no voluntary conspiracy, that the commission represented an arbitrary act of Carranza, and furthermore that the high prices prevailing were due to war conditions. The plan was looked upon as highly socialistic in the United States, as in keeping with the general political philosophy of the Carranza régime. General Alvarado's proclamation declared that the cultivation and exploitation of sisal were matters of public interest and subject therefore to supervision and regulation.

Only a year later, in 1919, the commission was liquidated. Financial irregularities and public grafting seem to have figured in it. Following this, the industry became very badly disorganized. Production fell from 935,000 tons in 1920 to 461,000 in 1922. Plantations were very much neglected. Accordingly, in 1922, a new commission was set up, called an "Export Commission." This too, was quasi-governmental in form. It was supported by export taxes of 3¼ cents per pound on sisal, which tax, however, was not collected on sisal sold to the Export Commission. This of course had the effect of bringing all the sisal to the commission. This commission at one time held stocks of over 500,000 bales of sisal, over one-half of a year's consumption. Another interesting feature of the plan was the provision requiring growers to curtail production from 15 to

50 per cent according to the amount of their output, until the existing stocks of sisal in the United States had been used up.

This plan has come under review by the United States. The attack was upon the "Sisal Sales Corporation," the sales agency of the Export Commission in the United States. The Federal Trade Commission seems at first to have declared its practices fair and legal, and likewise the trial court. But the United States Supreme Court declared the corporation had entered into "a contract, combination, and conspiracy intended to restrain trade" in sisal and to increase its market price within the United States. The common belief was that its practices were monopolistic. It seems to be agreed that the export commission did raise the price to over 6 cents a pound when it took the unsold stocks of sisal off the market in 1922. On the other hand, it assisted greatly in the work of restoring plantations and increasing production, and thus preventing a runaway market. Imports into the United States in 1925 were nearly as large as in 1918 and 1919.

Mr. Culbertson, formerly of the Tariff Commission, seems to think that the price in 1924 was 1 or 2 cents higher than it would have been without the commission, but that it was kept from going any higher because Manilla hemp would have taken its place rapidly at any higher price. Production of sisal itself could also be developed on a large scale in several tropical regions.

The special features of the sisal control were as follows:

a. The motive for the control, namely, protection of the growers against victimizing by a foreign buyer's monopoly.

b. The use of the export tax as a means of supporting the controlling body. It must be remembered in this connection that the Yucatan government had already used export taxes as a method of obtaining revenue from the sisal growers. Such taxes have the effect of restricting production.

c. The positive effort to curtail production by regulation in 1922.

d. The governmental participation in a control which to some extent was monopolistic.

e. Openness to legal attack by a foreign government because of the sales organization set up in that country.

In general, the plan more nearly resembles the Brazilian coffee-valorization plan than any other. There were the same taxes on exports to finance storage, the same attempts to control production, and the same governmental participation.

The Stevenson rubber plan had a short life, its end being hastened by the rapid expansion of rubber growing in the Dutch East Indies and other outside areas. The attempts at sugar control, directed mostly at reducing production, have encountered outside competition in even more pronounced form.

DOMESTIC PROGRAMS

Two recent examples must be mentioned of attempts in other industries in the United States to limit production and raise prices, following a period of large production and low prices. These are in petroleum and copper. Contemporaneously with the setting up of the ''institutes'' in each of these fields, there has been a notable advance in prices. Many in these industries ascribe these advances largely to the work of the institutes. No doubt most of the advance is due to other causes; but that the control programs have contributed some part is highly probable. The most that such organizations can expect to accomplish in ordinary times is more stable production and prices and a slightly higher average level.

CHAPTER XII

IS PRICE RAISING FEASIBLE?

Our final task with respect to the foregoing plans is to pass upon their individual and composite feasibility and desirability. A summary comparison of the various features of these plans will greatly assist to this end.

Under the transferable-rights plan, the grower will receive his extra price at the beginning of the planting season so that it may serve as a partial advance of production costs. Under the equalization fee, export debenture and Noyes and Paterson plans, the farmer will get his extra price when he delivers his product; under the Spillman plan, as a bonus at the end of the year. The first plan is clearly superior to the others as to this feature. The advance of production credit which it makes possible is highly important. There are pronounced psychological and other objections to the payment of a bonus at the end of a year.

Under the equalization-fee plan, the Australian and the Noyes plans and the Spillman plan, it is necessary to estimate the amount of the probable exports in advance of the crop or production year in order to collect the necessary fees or taxes to pay it. This makes it necessary either to collect large fees in order to be safe, and return the excess at the end of the year, or to build up a reserve. This is not a serious problem.

Under the equalization-fee and transferable-rights plans, the producers must necessarily receive as extra price the amount of the import duty, less the deficiencies in price on the export part of production. Under the other plans it is the export bounty less the deficiencies on the export part of the production which determines the level of prices which the producers receive, and the export bounty can be for an amount less than the tariff duty. The first two plans are, therefore, more clearly designed simply to ''make the tariff effective,'' using this expression in the somewhat special sense above defined. With all the plans except the export-debenture plan, the increase in price to the domestic consumers will be the extra price which the producers receive plus the tax or fee which goes to pay the export bounty. The export-debenture plan draws upon the federal revenue from other imports to pay the export bounty. All of these plans except the export-debenture and transferable-rights plans are able to finance themselves simply by adding the expenses of operation to the fee. The latter plan will provide its expenses of operation out of the sale of allotment rights.

Although for the same amount of increase in price to producers, the export-debenture plan will not raise the price of the product to consumers as far as will the other plans, the federal government will have to make up the loss in revenues resulting from it by some form of taxation, probably either income taxes or higher import duties. In its present state of mind, Congress might choose the latter procedure, which would leave the consumers worse than under the equalization fee and related plans, since import duties almost always cost the consumers much more than the revenues which the government collects. This is especially true of very high import duties such as these would have to be. If the lost revenue could be recovered from federal income taxes, the rank and file of the consumers would be better off with the debenture plan than with the other plans.

All of these plans except the export-debenture plan require making collections on the product somewhere in the channels of trade, which is a pronounced disadvantage.

The Noyes, Australian, and equalization-fee plans require collecting only the amount of the fee or tax, whereas the Spillman and transferable-rights plans require collecting the full amount of the increase in price, the former on all produce delivered, the latter on that part of it which goes into domestic consumption. The larger the amount collected, the more incentive to evasion.

The Noyes plan proposes to collect from the growers themselves; the Spillman plan from the local buyers; and the equalization-fee and transferable-rights plans from the processors and exporters. The Australian plan collects from the growers' cooperative processing companies. Collecting from processors and exporters is undoubtedly better than from farmers and local buyers.

Under the transferable-rights plan, produce will be moving through the channels of trade at two price levels, one domestic and the other export. This is ordinarily considered a disadvantage, but it would seem that the distinction between these two classes of product, one having rights attached and the other not, would prevent any confusion and tendency for the price levels to merge. Under the export-debenture plan, the produce will move at one price, which will be the normal export price plus the amount of the export bounty. This would also be true of the Noyes and the Australian plans. With an equalization fee plan in operation, and the fee collected on the processing, the raw product would move in the channels of trade at a price including the tariff duty less the equalization fee. The manufactured product would include also the amount of the fee.

The transferable-rights plan has the advantage in the respect that other farmers will be able to obtain the product for feed and seed and other farm and family uses at an export level of prices. One of the charges in the veto messages against the equalization-fee plan was that it would penalize the farmers in deficit feed areas, particularly the dairy and poultry farmers in the East.

Taken by itself without any appendages, the export-debenture plan would stimulate production the most. There seems to be little doubt that it would stimulate production. The export bounties could only be applied to crops of which there is an export surplus, and these would surely expand at the expense of the others. The data of the Department of Agriculture indicate at least a 14 per cent increase in agricultural production since 1921. Our agriculture and world agriculture seem at present to be in the midst of another period of growth. The bounties provided in the Ketcham bill would result in more intensive culture and heavier feeding of livestock on a great many of our farms, and in taking new land into farms or restoring a certain amount of abandoned land to farm use. Although the checks set up in the Ketcham bill are not adequate, it is possible to set up such checks under the export-debenture plan. If the export bounties were cut in half if the acreage of crop or production of livestock expanded 5 per cent in 5 years, the bounties would cease to operate as much of a stimulus.

The equalization-fee plan and the Noyes and the Australian plans would have appreciably less effect on volume of production because equalization fees or taxes would rise somewhat as exports grew. Increasing our wheat production from 800,000,000 to 1,000,000,000 bushels would increase the equalization fee by 5.6 cents per bushel; but it would still leave a bounty of 20.6 cents per bushel. The decline in world prices would reduce the 20.6 cents to a net gain of only 8.6 cents.

The provision in the last edition of the McNary-Haugen bill for checking expansion may be adequate under wise administration; but it has not usually been so considered. Neither the Noyes nor the Australian plan contain any provision for controlling the expansion of production other than that of the increase in the fee or tax that would result; but no doubt such a feature could be added to them.

The two domestic-allotment plans would undoubtedly stimulate the least expansion of production. This is the principal object of the system of individual allotments. Professor Stewart's objection to Dr. Spillman's plan does not apply to the other domestic-allotment plan, since under it the farmer is free to sell his allotment rights and get his full share of the domestic premium whether he has a short crop or not. On the other hand, it is probable that the advancing of some of the production costs made possible under this plan might induce the growers to buy more fertilizer and seed and hire more labor and thus expand production. It might also get the growers into the habit of considering their allotment of the product as properly standing all of the fixed costs and balancing only the variable costs against the production for export, just as manufacturers in this country do under the protective-tariff system. But expansion of production which takes place on this latter basis is not particularly objectionable from the standpoint of either individual or national economy. If revisions of allotments were made freely, the check on production would partly disappear.

The lack of flexibility in the Spillman plan is usually considered a very serious criticism of it. With agriculture in a constant state of flux as in the United States, as a result of the increasing use of machinery, substitution of gas power for horses, changing foreign competition, changing domestic consumption, and the like, any plan which ties the producers to the same products as now is to be condemned. The other domestic-allotment plan is partly saved from this criticism by its arrangement for revision of allotment rights.

Obviously, any one of these plans involves introducing an artificial element into the distribution of production. This will be especially true if the premiums apply to only a few of the products. If there is a complete schedule, as proposed in the Ketcham bill, it is still not possible to get the various rates into a relation to each other which reflects relative economy of production; but this argument is also valid against a schedule of import duties.

If all of these plans were set up so as to make the export bounty equal to the import duty, they would work alike in the respect that the geographical structure of prices that would result would be the same as under a condition of free trade in the product, except at a higher level. The same would be essentially true of the price structure with respect to grades and types of product. Free exchange with foreign countries would set in so far as advantages of location and differences in quality and type of product are concerned. In general, the higher qualities of goods would tend to be imported and the poorer grades to be exported. The organization of trade which the German import-certificate plan is intended to produce would develop in this country. There would be somewhat more foreign trade—both more imports and more exports. All of this has distinctive advantages from the standpoint of national economy. It saves considerable unnecessary hauling of commodities long distances behind tariff barriers and also permits processors to obtain the grades and qualities of raw material which they need at less expense and with less difficulty.

But at the same time, although local prices will be higher at all points than before, they will not be as much higher in those areas where product is moving in from abroad to satisfy the needs of the local processors. The spread between high and low grades of product might be narrowed somewhat. No doubt there would at once develop a demand in the areas affected for exclusion of imports, and it might prove difficult to stem the tide of sentiment which arose. If the demand became so insistent that it had to be met, the transferable-rights plan could not be adjusted to meet it so far as advantages of location are concerned. So far as differences in types of product are concerned, setting up a schedule of tariff rates for the product, with rates varying according to the quality of the product, would be effective if it could be made to work. In the last McNary-Haugen bill all such importations were shut off by requiring that an equalization fee be collected on the imported product as well as on the domestic. Such imports are largely prevented under any export-bounty plan in which the bounty rate is a considerable distance under the tariff duty. If imports were to set in, all that would be needed to check them would be to raise the tariff rates until it was as far above the domestic price level as before. This is what the Australians found it necessary to do.

So far as the effect on manufacturing is concerned, all of these plans permit the manufacturer to obtain his supply of raw materials on virtually the same basis as now. Unless the barriers mentioned at the end of the last paragraph were established, they would be better off in this respect than at present. The transferable-rights plan with its separation of a product into domestic and foreign supplies would prove a hindrance except for the transferability of rights. The manufacturer for export would, in effect, receive an export bounty on his product. The utilization ratios would prove something of a nuisance, sometimes resulting in slight profits and sometimes in slight losses; but in general would prove a small source of profit if past experience with them is to be judged.

But in other important particulars, manufacturing would be at a disadvantage. First of all, the cost of living of factory workers would rise and their real wages decline. This would put the manufacturers at a disadvantage in foreign competition. In the second place, the higher prices at which their products would sell would curtail the consumption of them somewhat. While these effects are serious from the standpoint of the manufacturer, they are not necessarily wrong from the standpoint of national economy. If prices of farm products were where they should be today, with their purchasing power around 105 instead of 90, the manufacturers would be in exactly the position which the farm leaders contemplate establishing as a result of these price-raising plans. Any change in domestic conditions which puts agriculture in its proper position relative to industry will unavoidably have such an effect as the above on manufacturing. If agriculture is to stop falling behind industry in this country at its present amazing rate, only some change which checks manufacturing in the foregoing manner can bring it to pass.

All the plans specifying a definite bounty rate are especially objectionable, since they furnish an easy basis upon which a foreign country may raise its import duties against the United States. Our own government recently furnished an excellent example of how to do this in the case of Australian butter. The equalization-fee plan is little if any better in this respect. It would be easy for a foreign government to find out the amount of the deficits for which exporters received reimbursement. The Spillman plan designates a specific bounty rate, but in turn sets up a check on the expansion of production and would be more acceptable to foreign countries for this reason. The transferable-rights plan would be the most acceptable of all on this score, because it not only furnishes very little stimulus to expand production, but also names no specific bounty rate. All the plans which work something like the German import-certificate system would be more acceptable to foreign countries.

The export-debenture plan would require the least additional machinery of administration, and the allotment plans the most. All of them set up some kind of a central board or commission, but with some of the plans this agency would have little to do so far as the price-raising activities alone are concerned. All but the equalization-fee plan assign a considerable volume of additional work to the Treasury Department.

Evasion is a problem in all of the plans which involve collecting a fee or tax; or an addition to the price, as in the case of the two domestic-allotment plans. This evasion might take either of two forms: one, collusion to avoid payment of taxes, such as might occur between a grower or a local buyer under the Spillman plan, or between a processor and a dealer under the transferable-rights or equalization-fee plans; and second, a certain amount of unreported local processing, such as might occur with pork and lard, especially. Any flour or pork sold beyond the reach of the revenue officials would escape paying an amount equal to the fee in the case of the McNary-Haugen plan, or an amount equal to the duty under the domestic-allotment plans. This difficulty seems so serious in the case of pork and lard that few would advocate its application to them at present.

All of the plans are somewhat bureaucratic. But the export-debenture plan, without its appendages in the Ketcham bill, is no more bureaucratic than the Customs service. As for the others, bureaucracy is their greatest handicap. But it is by no means a fatal handicap. Otherwise we should have to abolish most of the bureaus and commissions in Washington, starting in with the Interstate Commerce Commission, the Federal Trade Commission, the Federal Reserve Board, etc.

None of these plans is price fixing. They are all plans for raising the price of the product in the domestic market above the world level, exactly in the manner of tariff duties. They are all plans in the same general class as the import duty plan so widely employed today. There is no argument which is valid against them on the score of price manipulation which is not valid against the import duty system.

So far as ease of operation at home is concerned, the export debenture plan is superior to all the others, except the import duty plan which we know so well. But its probable reception by foreign nations is a very serious obstacle to it; and likewise its financing itself by drawing on the public revenues. If the first of these could be met by vigorous checks on expansion of production, as seems highly probable, and the second by increasing the federal income tax receipts a little, to which course of action only political objections can be raised, it would be the best plan to adopt. But either one or both of these objections might prove fatal to its adoption by Congress.

Except on the score of ease of operation, the domestic-allotment plan with transferable rights seems to the author to have more points in its favor than any of the other plans—its provision for checking expansion of production, its not placing any bounty on exports, its advancing of production credit, its providing a measure of insurance, its not raising prices to other domestic users of the product for feed and seed, its making collections from processors and not from farmers and local buyers and transportation agencies—all are strongly in its favor. Its permitting a limited amount of exchange with foreign countries involving advantages of location and difference in quality, should also be considered an advantage. Against it is first of all the major difficulty of the individual allotments, and second, its requiring the collecting of a large margin—42 cents a bushel for wheat—which would be conducive to evasion. This latter would be a very serious difficulty in the case of pork, beef, and dairy and poultry products in the United States, if the tariff duties were as high as on butter at present.

Clearly, no one plan is best for all products. For sugar, wool, flaxseed, lemons, beef, and possibly dairy products, surely import duties are to be preferred. For wheat and cotton and cottonseed oil and several types of canned fruits and vegetables and dried fruits, the transferable-rights plan has most to recommend it. For corn, pork and lard, poultry products and, possibly, dairy products, the export-debenture plan is to be preferred, with rigorous checks on expansion of production. These three methods of raising prices of farm products fit well together. The income receipts from the first list of products can be used to pay the bounties on the third list, especially the increase in receipts from the first list from the higher duties that are likely to be imposed.

The conclusion of the author is that a program of price-raising activities such as the foregoing paragraph outlines is workable—and desirable if the country is to remain on as highly protective a basis as since 1896. If the country sometimes tires of import duties, export bounties, allotment rights, and the like, and wishes to revise its policy, then all can be reduced together, import duties along with the rest. The process of reduction will not need to be so guarded in that case since all lines of production will be treated equally.

If such a program as the above were adopted, the tariff schedules on farm products would need to be revised somewhat. The present duties on farm products mostly assume that they will not be effective. These plans would make them effective wholly or in part according to which plan was applied. In addition, a whole new raw-cotton and cottonseed-oil schedule would have to be devised. What is the proper basis for tariff duties to go with the transferable rights and export debenture plans? Under the former, complete exclusion would not seem necessary or desirable; and the full amount of the duty would be added to consumer's prices. It would therefore seem best to have the rates only moderately high. Differences in cost of production could not very well be used as a basis for cotton duties for the ordinary staples. Anyone who advanced the plea that costs of production of ordinary staple cotton were higher in the United States than in the principal competing areas ought to be laughed out of Congress—and he might even be so received. The real objective is to raise the price of cotton so that cotton growers can live better. There would be no possible basis for making the rate except frankly to accept this. The rate should be one which would help them moderately without taxing the users of cotton goods too much. Five cents per pound would seem to be such a rate.

So far as wheat is concerned, the same situation would prevail except that potential imports might figure in the situation a little more. A rate under 30 cents a bushel might permit too large imports in certain years and weaken the effectiveness of the plan. Most people would consider 42 cents a bushel for wheat, added to the price of bread, as a little too much. It must be remembered that even in the prosperous United States, there are a few million of people for whom a difference of a 1 or 2 cents on a loaf of bread is not to be ignored.

The export-debenture rates are all added to the producer's price and hence do not need to be as high as the rates under the transferable-rights plan in order to get a certain increase in returns to the producer. There are advantages in having the tariff rates as high, or nearly as high, as the debenture rates; but if both are made too low, imports may set in and the expenditures upon export bounties will increase, and if both were made high enough to prevent imports, prices to consumers might be raised too much. In most cases, therefore, an import duty somewhat higher, perhaps a half higher, than the bounty rate would probably work best. As already explained, thought would also need to be given to effect on production. Too-high rates would stimulate production too rapidly and produce a bounty-less period of lower prices. When the bounty went on again, it might precipitate another spurt. The proper export debenture and accompany tariff rates would depend upon the elasticity of supply of the production, the resulting imports, and what is a reasonable imposition upon the consumers.

A program such as above outlined would call for some kind of a ''Federal Agricultural Commission.'' It would seem best to outline rather explicitly the program it was to follow, and to grant it rather specific powers—as has been done with the Interstate Commerce Commission, the Federal Reserve Board. Its relation to the Department of Agriculture should be stated very carefully.

PART IV

ADJUSTMENT—INDIVIDUAL AND COOPERATIVE

The remedy for the economic ills of agriculture which "sensible conservative people" have advised is to "let it alone and give it time." The classical name for such a policy is "*laissez faire*," which is the French translation for "let alone." The great economist, Adam Smith, introduced this theory of progress to the English-speaking world. The modern exponents of it have told us that any meddling with the slow operation of the economic forces working in agriculture is likely to prove to be blundering and to leave it worse than before. Others have been disposed to call these exponents of the safe and sane mere "economic fatalists," and have urged varying degrees of positive action short of actual attempts at government price raising. The mildest form of action proposed has been to supply farm people with as complete and accurate information as possible as to present and prospective production, consumption, prices, and expenses of their various products, as to foreign competition, as to population changes, as to relative opportunities in various areas both in the city and in the country, and a long list of other pertinent subjects, and thus assist them in making needed adjustments, and hasten the operation of economic forces. This policy may be called "assisted *laissez faire*."

A way of supplementing *laissez faire* in agriculture is for the farmers to organize cooperatively and act as larger units in many lines of effort, especially in marketing, rather than singly and alone. Some exponents of cooperation have gone so far as to look to it to accomplish much of what is proposed by the price-raising plans discussed above. Thus witness the later McNary-Haugen bills, the Fess-Tincher and other measures presented to recent Congress.

The extremest proposals, short of actual price raising, are the stabilization corporations, such as proposed by Secretary Jardine and several others, the price insurance schemes of the McNary-Haugen and Ketcham bills, the contract scheme proposed in the Business Men's Commission report, and the New Zealand Stabilization plan.

Part IV undertakes to discuss the three foregoing procedures. The actual adjustments needed, such as in production programs, marketing, credit, and the like, will be discussed in Part V. In this section, the approach is wholly as to the methods and devices for facilitating the adjustments.

It is now clear that the price-raising plans discussed in Part III are not really directed at handling the surpluses analyzed in Part II. They are instead directed primarily at raising prices of farm products relative to those of other commodities. They necessarily contribute something to the handling of overplanting and season surpluses, but this is an incidental feature of them. The methods discussed in this section are directed primarily at the surpluses, as such. It is expected that handling these surpluses properly will have significant effects on prices which farmers receive for their products, but one has no right to expect from them the pronounced effects sought by the plans just analyzed.

This must not be taken to indicate that they are of minor importance. There are good reasons for believing that benefits derived from them will in the end mean more to the agriculture of the United States than the quicker and more artificial results of the drastic proposals of the price-raising type.

CHAPTER XIII

ASSISTED LAISSEZ FAIRE

While none of us approves a philosophy of crude economic fatalism, we must believe that, in the aggregate, the adjustments made by individuals to changes in economic environment are the most significant factors in progress. If these individual adjustments were made promptly enough, and were always in the right direction, we could well sit back and let economic forces play out their rôles. Even if we introduce artificial devices, the individual adjustments are still necessary. Oftentimes individuals make poorer adjustments to the artificial controls that are set up than they do to this sort to which they are accustomed.

In general, there is altogether too much lag in the individual adjustments. The farmers in southern Minnesota should have been growing as much corn and keeping as many hogs in 1915 as they were in 1920. Farmers in the Red River Valley of Minnesota should have grown about as many potatoes in 1910 as they did in 1920. By the time they had made these changes, economic conditions had changed and it was no longer especially profitable to be growing so much corn and potatoes. Many farmers also experiment with adjustments which prove to be wrong. There is a vast amount of wasteful trying out of new crops and cropping systems. Surely, the process of individual adjustment can be made much more effective if the growers are assisted adequately. The lags can be reduced and wrong moves prevented in many cases. Farmers can use such assistance to advantage in their cooperative as well as in their individual endeavors. The cooperative organizations of the United States are fully as much in need of such assistance as are the individual farmers.

The assistance needed is, principally, accurate information as to present conditions and as to trends and probable developments; a certain amount of experimenting with new crops or new methods, and research that develops methods of handling technical matters, such as the control of the parasites that infest southern livestock. Not only must the information be collected, but it must be analyzed and then presented to those who need to make the adjustments. The nation is rendering a large amount of such service at present; but it is abundantly clear that it is not rendering enough. The purpose of this chapter is to outline the kinds of information and analysis of it which is needed, and to show how it can be obtained.

The point of view of Secretary Jardine on this subject was expressed in an article in the *Farm Journal* of Aug. 15, 1927:

> Every farmer must be a forecaster. He must act on his opinion of the future when he decides to plant more of one crop and less of another, to keep more of this or that class of livestock. He does the same when he borrows money to expand his operations, and when he buys more land, thinking that it will enable him to make more money by farming on a larger scale.

Objections are frequently raised to the spending of public funds to assist farmers in making such forecasts and adjustments. Why cannot they stand on their own feet as business men do and make their own forecasts? Secretary Jardine's comment upon this in the same article was as follows:

> Large business concerns have gone a long way in providing themselves with statistical basis for their forecasting; but fundamental differences between agriculture and industry make it impossible for the individual farmer to do this for himself. It is a proper function of government to provide such facts with their proper interpretation and make them available to all to serve as a guide for the future. When the government has done its legitimate part in this, there will still be plenty of room left for the farmer's independent judgment.

The reason that agriculture especially needs to have such facts and interpretation provided it by governments is that its business unit is too small to afford the expense of it. Most farm products have a world market. It is not possible for one family farm to set up organizations for collecting information as to production and consumption over the whole earth. To be sure, it could be done by the farmers acting cooperatively; but voluntary organizations powerful enough and resourceful enough to undertake tasks of this kind need decades and, perhaps, centuries to build. The public interest in having such information and interpretation available to the farmers is so great that we cannot afford to wait that long for it.

There is no gainsaying the fact that small business men need a continuous-current information service as much as the farmers, and that for the most part they have not had it; but it has largely been their own fault that they have not. They have not felt the need for it sufficiently to campaign for it vigorously. Today, the activities of the Department of Commerce, and of the merchants' and manufacturers' organizations that are being established, are supplying this service to the small business men to an increasing degree.

THE INFORMATION NEEDED

The analysis in Part II makes clear the sort of information which is needed for adjustments which relate to *orderly production* and *orderly marketing*. Of these two, no doubt orderly marketing has thus far received the more attention. But as President Coolidge so well remarked in his address at the International Livestock Exposition at Chicago in 1924, "orderly production is a necessary preliminary to orderly marketing." The information which is needed as a basis for orderly production relates to acreage and production of crops and number of head of livestock and livestock production for each year as it goes by; and for a long series of preceding years, in order to observe the trends and the ups and downs that have occurred, and single out and measure the facts that have produced the trends, and the deviations from trends from year to year, as a basis for forecasting developments in the current year and probable trends in the near future. Much of this information is also needed for the principal foreign countries competing in each product. Growers of any product must know the trends in its production abroad and the reasons for them. They also need to know about the changes and trends in consumption both at home and abroad. They must have worked out and measured for them the relations between supply and price and consumption and price, and between price and subsequent production. They also need data relating to prices and trends in supply of important cost goods such as feed, fertilizer, labor, and machinery. If any individual farmer is going to apply this information to the situation on his own farm, he must be supplied with a considerable amount of information not commonly possessed as to the relation between the amounts of feed, fertilizer, and other cost goods used and the resulting product. He needs similar information as to the way in which varying the proportions of different products affects farm incomes and expenses in the general territory in which he is operating. When new types of machinery come along, such as tractors and combines, he needs to be supplied at once with all pertinent information as to their costs of operation, their probable life and output.

The information needed to help farmers to a more orderly marketing relates to the questions of when to sell and in what markets. Chapter VI showed that it is easy to lose money by holding for a better market. The data wanted are of prices and supply in past years and of the current situation. The latter must be as timely as possible. The cooperative associations need such information even more than do the individual farmers because their mistakes are almost fatal to their continuous existence.

AVAILABLE INFORMATION

No one is in a better position to speak with authority on the quality and extent of the agricultural information, at present available, than Dr. Joseph S. Davis of the Food Research Institute, an organization which for several years has been making a most thoroughgoing attempt to use it. First, let us quote from Dr. Davis as to the quality of the men who are endeavoring to supply this information:

> First I must express, with emphasis and without flattery, cordial appreciation of the valuable work of both the Census Bureau and the Department of Agriculture—notably the Bureau of Agricultural Economics—in the field of agricultural statistics. For furnishing primary data of increasing scope in summarized form and in considerable detail, for analyses and estimates, for contributions to statistical method, and in many other ways, the "consumers" of agricultural statistics, and, indeed, statistical workers, in general, owe a great and increasing debt to the Federal Government. No other country today, I believe, is so well served, and the results are increasingly evident in a surer grap-

pling with agricultural problems by the individual farmer and research worker, if not yet so obviously in respect to legislation.

The taking of an interdecennial census of agriculture; the monthly reports on cotton ginned and flour milled; quarterly reports on stocks of wheat and other cereals, hides and skins, and fats and oils; the biennial censuses of manufactures covering the use of agricultural products as materials; the new series of census monographs. All these represent value to users of agricultural data. The agriculture yearbooks, *Crops and Markets, Foreign Crops and Markets,* and special bulletins and mimeographed materials of the Department of Agriculture are full of excellent data of broader scope and better quality than were formerly available. Special mention should be made of improvements in methods of crop and livestock estimation; compilations of weekly visible supplies of cereals; various indexes of farm prices, farm wages, farm real-estate values, etc.; estimates of agricultural income; analyses of the world situation in various commodities; outlook reports; price analysis studies; experiments with multiple correlation, etc. In increasing measure much of this material is proving of direct value to farmers and business men, apart from its bearing on economic and political problems.

I am also impressed by the comparative absence, in these bureaus, of a spirit of complacent self-satisfaction. A proverbial tendency in governmental statistical work—to say, "We have always done thus and so; let well enough alone"—is certainly not characteristic of these organizations today. There is a commendable readiness to admit limitations, deficiencies, and even errors in statistical data, methods, and interpretation, and to welcome—as far as anyone can be said to welcome—criticisms and suggestions. This is as it should be, but it is none the less a matter for congratulation. Especially in the Bureau of Agricultural Economics there has been developed in recent years a group of research workers who command high respect as such, and who display a competence and a progressive, scientific spirit which reflect great credit on the Department leaders as well as on themselves. Their researches have done and are doing much toward bringing current agricultural statistics up to the standards required by all research workers.

As to the data on crop acreage and production, Dr. Davis' comments are as follows:

Among the many basic census data are those on crop acreage and production. Here, if anywhere, the consumer of statistics must rely heavily upon the census. I regret to say that careful investigation shakes one's confidence in these census figures as available over a period of 60 years. It is too much to expect even a census enumeration to be complete, though we are prone to assume that it is. But there is evidence of material variation in incompleteness from state to state and from census to census. This gives real cause for concern.

Some years ago, in plotting annual data on wheat acreage, as revised by the Department of Agriculture on the basis of census figures, I was struck by the fact that changes in trends occurred conspicuously at the census years—which I could hardly accept as inherently probable. Later, Holbrook Working found that census data on wheat acreage by states showed inconceivable shifts in levels, implying overstatements or understatements in particular censuses. The Department's published revision of annual estimates of crop acreage in New York State[1]—intended as a model for similar revisions of similar data for all the states—strongly suggests errors in census data for which no correction was attempted. The production data, which in many cases can be checked by data on disposition, derived in some cases from more adequate censuses of manufactures, are much more defective than the acreage statistics. If such figures are as defective as we suspect, the raw material for historical studies of many kinds, including newer types like price analyses and indexes of physical production, cannot safely be used for such purposes, and many such studies already made are weak in their very foundations.

The published data of the agriculture census of 1925 are the most disturbing of all. After considering these very fairly, the Department of Agriculture decided that to use them as a basis for adjusting their estimates for the year 1924 and following would introduce a very serious error. The figures which they finally published are from 2 to 4 per cent higher than the census figures for most crops, and much higher for several of the lesser crops; for example, rye, rice, potatoes, sweet potatoes, tobacco. The figures for production have been raised even more than the acreage figures; for example, 8 per cent in the case of the major crop, wheat. Leon Truesdell of the Census Bureau thinks that the Department of Agriculture's figures are overstated and bases this belief on possible duplication in the data on railroad shipments and the like which the Department of Agriculture uses as a final check on production. Dr. Davis believes that the Department of Agriculture's figures are more nearly correct. The important point, however, is that here are two official sources of information which do not agree, which raises the question as to the value of any forecasts of production based upon them.

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[1] *Dept. Circ.* 373, April, 1926.

The statistics on production and number of head of livestock, and production of meat, lard, butter, and other animal products, are even less satisfactory. For the years 1850 to 1900 the census figures are as of June 1; for 1910, as of April 15; and for 1920 and 1925, as of June 1. None of these dates is satisfactory. We shall probably never have a reasonably satisfactory agricultural census until some date in November or December is adopted permanently. But, after all, it is the frequent changing in the date that has done the most damage. The changes in the animal population that occur between January and April made the 1920 census statistics on this subject partly useless and introduced errors into the estimate of hogs and beef cattle that are not yet entirely adjusted. The statistics which the Department of Agriculture is now collecting from stockyards and from various other sources are each year proving more satisfactory, but they need a careful census from time to time to furnish a base for them. The 1925 census figures showed an increase of 1½ per cent in sheep and lambs and the department's figures showed a decrease of 5 per cent. For hogs, the census data showed a decline of 14 per cent, and the department's figures showed a decline of only 7 per cent. The department's estimates may be wide of the mark, but presumably are more nearly correct than the census data. The data on annual production of meat and other livestock products are least satisfactory of all. Not only is the reporting of the production on farms incomplete, but that of slaughtering, outside of federally inspected establishments, is even more so. This makes it impossible to estimate livestock production with any degree of certainty. The reporting of dairy and poultry products is no better, and, in some respects, perhaps even worse.

If the Division of Historical and Statistical Research in the Bureau of Agricultural Economics was given resources enough, it could do a great deal in the way of reconciling the available data of past production and eliminating the error from them. But it is so loaded with current duties that it rarely has any time to work on the revision of the old data. If the Division of Crop and Livestock Estimates had additional men and resources, it could much further improve its methods for estimating.

All students of agricultural problems and all users of agricultural statistics agree that the census data should hereafter be published by townships as well as by counties and states. Conditions vary so much within most counties that county averages do not furnish a sufficiently detailed basis for any analysis of needed adjustments in production and land utilization.

The data collected by the Division of Crop and Livestock Estimates are very inadequate when it comes to the minor crops, tree fruits, small fruits, and vegetables. The usual methods for collecting data for staple crops produced over a wide area will not suffice for these. It has already been pointed out that the most serious maladjustments are with the minor crops.

More important, however, than expansion of the census is proper financing of its present program. Again let us quote Dr. Davis:

> I cannot escape the conviction that the Census Bureau suffers from chronic financial malnutrition. It has not enough funds to do well the work demanded of it. It is generally believed that the inadequacies in enumeration in the 1925 census of agriculture were due in no small measure to the low rate of pay for enumerators. The higher level of wages and salaries inevitably involves a higher cost for such work except at the expense of its quality. A stingy policy can only result in a degree of slackness that detracts from the value of the results in a measure quite out of proportion to the quantitative errors or omissions. I believe also, though I have not tried to prove it, that the Census Bureau, even more than many other governmental bureaus, suffers from low salary standards especially in the higher positions. Much of its work is indeed of routine character, but the direction of its work, the formulation of schedules and tabulations, the analysis of its raw data, and the maintenance of high standards of collection, checking, and editing, are tasks so exacting as to require highly trained and experienced persons, and a larger measure of methodological research. Some of the needed talent is obtained from special experts or consultants, but the Bureau seems to offer too little attraction to get and hold such persons in sufficient numbers on its own staff. Paradoxically, an economy policy may be very costly.

Additional funds will make possible the successful handling of certain questions which do not give useful returns at present.

The enumerators now have to hurry too much in taking the schedules if they are going to earn a living wage at it. Also the enumerators do not receive instruction enough before they begin their work. Leon Truesdell, speaking on this subject before the American Statistical Association, in December, 1927, advocated omitting from the schedules all of the questions which have not given dependable information. Unless some changes such as indicated can be wrought, or can be expected, within the next few decades, his suggestion should no doubt be adopted. But after all was done along these lines that can be reasonably expected, there would remain questions for which the ordinary census enumeration would not give satisfactory answers.

Also considerable information is needed by the Division of Crop and Livestock Estimates at more frequent intervals than every 5 or 10 years. It is, therefore, being proposed at present that the federal census be supplemented by a sample township census every year. Some preliminary analysis of data has indicated that data from 50 to 100 townships properly placed in the state of Iowa will give results that check very closely with the state averages. Men could be selected for these township enumerations who are especially trained for it, and certain kinds of information could be obtained which are not possible with an ordinary census. They would be more nearly of the nature of surveys than the census enumerations.

The Division of Crop and Livestock Estimates must be looked upon increasingly as an organization for collecting current information of all kinds and descriptions that relate to agriculture. It must collect this information in more detail so that it can make statements for smaller areas than whole states. It must provide us with data as to local prices of farm products and of commodities and services which the farmers buy. It must be so set up that it can make emergency reports when the corn crop is hit by an early frost, or the wheat crop by rust or winterkill. It must be in a position to report accurately all changes in farm practices from year to year. We must have much better data than at present on the land market and rents. It never will be possible to obtain highly accurate data on some of these matters, but much that is highly worth while is still within reach if only the resources are provided for it. As to crop acreages, there is no reason why we should not have them with a relatively high degree of accuracy. A study of past records indicates that the estimates of acreage have been more at fault than those of condition and yield. Methods no more refined than those now used to some extent, will give crop acreages with sufficient accuracy. All that is needed is more funds to extend the use of these methods. A study of reporting and forecasting technique will help greatly in the matter of the condition of the crops. Such studies as those made by Frederick V. Waugh of the problem of forecasting the potato crop promise a great deal. Mr. Waugh has shown that farmers in Maine, as well as elsewhere, are altogether too prone to judge potato-crop prospects according to the amount of the foliage. It turns out upon investigation that heavy foliage has more often been associated with low than with high potato yields. Rainfall which comes at the season of the year when the potato tops are growing frequently shortens the crop. Mr. Waugh found that by using rainfall alone, but separating it according to the months when it occurs, he was able to forecast the potato crop with a much greater degree of accuracy than has been done in the past on the basis of potato-growers' condition reports.

THE FOREIGN INFORMATION SERVICE

The United States is just at the beginning of the development of the necessary service for collecting information as to foreign production, marketing, and consumption of farm products. The most important phase of this service is collecting the data which indicate trends in production and reasons for it. Such information must be collected by men fully versed in agricultural technique, and should be carefully analyzed by competent economic statisticians. Changes and trends in consumption must be studied in the same careful way. An effort has been made before the last three sessions of Congress to have a foreign information service for agriculture properly authorized and established, but without success. It is time that this be made one of the major planks in the program of agricultural reform. The farm organizations should outline carefully the kind of a service needed; the countries where agricultural men should be stationed; the kind of reports that should be obtained; and should ask that a bill be presented to Congress with sufficient financial support for the program. This is only one of a number of matters of major importance which have received inadequate attention because of the emphasis on price-raising measures.

THE ANALYSIS NEEDED

Students of agricultural problems differ somewhat as to the extent to which public agencies should carry the analysis and interpretation of data, some inclining to the view that the function of government ceases with the mere collection and publication, others that it should also include careful analysis with suggestions as to the application of results.

This difference may be illustrated in the case of farm-management data. Shall the farmer be supplied with data as to present and past production and prices and the like and be left to figure out what these mean as to probable prices in the present year and in the next few years? or shall these data be analyzed in such a way as to enable public agencies to point out the changes that have occurred and are likely to occur in the future? or shall they go still further than this and say to the producers of a certain product in a certain area that present and impending conditions indicate that the growing of more or less of this crop will prove profitable? Shall they be told that, in view of impending prices for cotton and fertilizer, they ought to use 25 per cent more or less of it than last year?

If all of the farmers were as well informed as are 5 per cent of them, probably the first would be sufficient. If all were as well informed as are the best one-fourth of them, it probably would be best to go only so far as to point out what the significant changes in economic conditions have been and are promising to be; letting the individual farmer make the applications to his particular problem in any way that he sees fit. Taking farmers as they are, it seems advisable to go somewhat farther, and indicate what the applications should be to a considerable number of typical situations so that the individual farmer can select the one which seems to fit him best. Unfortunately, not a great deal of really practical instruction has ever been given to the farmers of the United States as to how to use economic information in figuring out reorganizations of their cropping and production programs. Many of the early teachers in this field started off on the wrong track. J. W. Tapp, of the Bureau of Agricultural

Economics, in discussing this subject before the American Statistical Association last December, remarked that it is largely within the last 5 years that leaders of cooperative organizations, and others assisting the farmers with their readjustments, have substituted an ''outlook'' for a ''cost of production'' point of view in such matters. The early workers in this field were thinking too much about how to calculate unit costs of the various products, instead of about methods of readjusting farm organizations to existing and pending economic developments. Under the circumstances, those who would help farmers with their readjustments must be more explicit than will be necessary a little later.

The foregoing question is even more pertinent with respect to price analysis. An understanding of the price situation is needed in planning both production and marketing programs. Price situations are even more difficult to analyze and interpret than those relating to production. Nevertheless, workers in the Bureau of Agricultural Economics and at several of the state experiment stations have made promising headway along these lines in the last 10 years. Some results have been obtained that even now are safe to apply to particular situations. They will not always turn out as anticipated, but they rather generally will. We do not abolish the weather-reporting service merely because a particular storm center which seemed to be headed in this direction turned and went up the St. Lawrence Valley instead, or perhaps took an extra day or two to get here. We have learned that there is a probability about the direction and rates of travel of storm centers which enables us to forecast the weather with a degree of certainty which is highly useful. We are appreciating the value of it more each year. Recent developments in aerial navigation have assisted greatly to this end. We need to acquire a similar attitude toward the problem of reporting price conditions and impending price developments. A certain result which has ensued twenty-nine out of thirty times in the last 30 years may not ensue next year. It may fail to ensue five times out of thirty in the next 30 years because of new factors which enter into the problem. But this does not make worthless the knowledge of the relationship. We must learn to expect wrong forecasts in the matter of price the same as with the weather, and appreciate that we are better off when we can anticipate the future eight times out of ten than if we had to guess it and be right half of the time, or observe it superficially and be right two-thirds of the time.

One important part of an adequate price service is, therefore, a public properly educated in the use of it. There are two prevalent attitudes toward it that are equally dangerous. One is that of too great faith in it, and the other, that of standing ready to condemn it if it proves to be mistaken only once. The manager of a certain cooperative remarked to one of his friends last year that he had a man in his organization who knew what the price of his product was going to be, that he had analyzed all of the facts and figures with respect to it, and could tell him absolutely what was going to happen. No small number of men in the business world have an attitude of this kind, or acquire one rather readily after a limited amount of successful experience with price analysis in their organizations. One can only feel a great deal of sympathy for the men in such organizations who are making the price studies, for they know if they are properly qualified for what they are doing that only the best of good luck can make their forecasts turn out right several years in succession.

Another type of analysis, which is much needed, is that of farm incomes. Income is the best single measure of economic conditions in an area. If we could have a net farm income figure available each year for each state, we would know where to direct our energies in hastening necessary readjustments and providing emergency relief. If such information is to be as useful as it should be, even a state is rather a large unit. The National Bureau of Economic Research made a heroic attempt to estimate the average income of all the farmers of the United States from 1910 to 1919, and in the years, 1919, 1920, and 1921 by individual states. It will presently publish similar figures for the years since 1921. Their efforts along these lines have probably been worth while, although seriously misleading in a number of important respects. The Department of Agriculture since 1919 has supplemented these figures on the basis of the data in its own files and data currently collected from a list of 10,000 to 15,000 farmers. The results are published in the July *Crops and Markets* of each year. Some of them are given according to geographical groups of states. After working toward this end for several years, the Bureau of Agricultural Economics has at last worked out the details of a plan for estimating net farm income by states; but has not yet found the time and resources for making the necessary calculations. Once this is done, there will still remain the task of assembling these figures each year. It should be done as quickly as possible after the data are available. Obviously, even these income figures will not be very accurate, and plans should be studied constantly for collecting better source material.

THE OUTLOOK REPORTS

The most important single development relating to assisting farmers with their production programs, is that of the so-called agricultural outlook. The plans for this were developed by Secretary Wallace and Dr. H. C. Taylor, Chief of the Bureau of Agricultural Economics at the time, in the spring of 1922, and the first outlook statement was published in April, 1923. Once a year all of the forces in the Department of Agriculture are mobilized around the one question of determining as nearly as is possible, on the basis of existing information and analyses, what the present condition is with respect to production, consumption and prices of the farm products, what developments are under way with respect to all these, and what adjustments the producers should make in order to meet these impending developments. A careful analysis is also made of the general agricultural and economic situation as it affects agriculture as a whole. Special emphasis is placed upon presenting the pertinent facts in such a way that individual farmers can make whatever interpretation of them they wish; but a certain amount of actual recommending of production programs is undertaken. The aim in making such recommendations is to be extremely safe and conservative. If, however, the acreage of a certain crop has been too large for the past year or two, the outlook committee does not hesitate to state that a reduction in acreage is much to be desired. If it should turn out that too many people follow such suggestions, with the result that the acreage is changed too much, a different policy would have to be pursued. But although there is evidence that its recommendations, if it is proper to go so far as to call them recommendations, have had considerable influence in the right direction at times and in places, they have never been followed so freely as to result in overdoing the matter of readjustments.

The data and recommendations of the national Outlook Report are now being carried into most of the individual states and analyzed in more detail as to local conditions. In some states, district or even county meetings are held where interested farmers work out the local applications.

Perhaps even more important than the actual information which is carried to the farmers is the stimulus to thinking which it gives. The farmers of the United States are thinking much more in terms of economic conditions and necessary readjustments than they were 10 years ago, and the outlook program of the Department of Agriculture has been an important factor in this.

The outlook program has also been of much service to the Department of Agriculture itself. It has brought the department's energies to a focus on the actual existing economic situation, and has related its research program to it. It has revealed important gaps in the information and analysis, which department workers have straightway hastened to fill. The same influence has been carried out to the workers in state agricultural colleges and experiment stations, with the result that all public agencies serving agriculture are doing more useful kinds of work than formerly.

ASSISTANCE IN OTHER FIELDS

Assistance of a similar nature is needed with respect to many other phases of agriculture—credit, for example. Not only do the farmers themselves need help in analyzing the problem of when to borrow and where and how much, but the bankers need assistance in determining what loans are safe under various economic conditions. Experience of the last 10 years has indicated that local banks even more than the farmers may fail badly under a program of unassisted *laissez faire.*

It is equally obvious that local governmental units, counties, townships, and school districts need a great deal of assistance in determining how to spend the public money and when it is safe to do it. A comparison of the tax rates of adjoining townships and counties in any state will disclose that there must have been great variations in practices with respect to the foregoing. Public borrowing needs analyzing more than public spending. State and local tax officials need a great deal of assistance in the work of appraising real estate. Most important of all, the farmers of the United States need a vastly better understanding of our whole tax system and particularly of the method of operation of general property and income types of taxation.

Must we continue to blunder along in the matter of the relative economy of railway and motor transportation? It would seem possible to assemble information that would assist greatly in the wise solution of this problem. If roads are to be built, what kind of roads are the most economical for a given kind and density of traffic?

Land utilization offers similar opportunities for a program of assisted *laissez faire*. It should be possible to collect a great deal of information that will be useful to a state or a community in determining what uses of the land within its boundaries is likely to prove most advantageous. No area can afford to make a mistake in a matter of this kind. If farming is now being carried on in the area under increasing competitive disadvantages, it is high time that the matter be studied carefully. No settler should ever locate in a region with which he is not familiar without an understanding of all of the pertinent facts bearing on its future. All areas offered for reclamation should be carefully analyzed as to their agricultural as well as to their engineering possibilities. The adjustments needed for these and other phases of agriculture are analyzed in detail in Part V. They are introduced here only to show their relation to the problem of method of adjustment.

CHAPTER XIV

COOPERATIVE ACTION

Ten years ago most people would have deemed highly visionary any proposal to reform the agriculture of the United States by a general resort to cooperative organization; and not a few would have considered it subversive to prosperity and even radical. More recently than that, a trade journal catering to the middleman's interests published a cartoon which pictured a county agricultural advisor (or "county agent") leaning over the fence looking at a field of growing corn, with a herd of cattle just beyond and a grain elevator and stockyard off to his left. It bore a sign pointing the advisor very specifically to what was in front of him, and the inscription "His Field." Workers in the agricultural colleges and in the Department of Agriculture were freely told in those days that they had no business using the taxpayer's money to help farmers set up cooperative enterprises to steal away the business of the private middlemen. Such sentiments are still strongly felt in many business circles. The Department of Agriculture is still under fire from such interests, and, no doubt still watches its steps carefully in this branch of its service. Many deans of agricultural colleges and directors of extension still fear such opposition more or less, and, in consequence, some of them render only meager aid to the cooperatives in their states.

But nothing could be more emphatic than the verbal support which President Coolidge, Secretary Jardine, and Secretary Hoover have given cooperation in their public utterances during the past 4 years. In his opening messages to Congress and in his vetoes of the McNary-Haugen bills, President Coolidge repeatedly set forth cooperation as a principal hope of agriculture. The farm relief measures which have had the support of the administration ever since the winter of President Coolidge's agricultural conference have been those in which proposals designed to aid or make use of the cooperatives have figured very largely. How all-embracing Secretary Jardine's ideas are on the subject may be judged from the following passage from his article in *The Farm Journal* cited before:

> My position on government and cooperation, in short, is that the government should help farmers to help themselves through cooperative effort to market their products in an orderly manner, to adjust production to demand as far as possible, and to reduce price fluctuations by some workable and safe means of handling surpluses. . . . Large-scale organization for orderly marketing and for adjusting production to demand is essential to that economic stability of agriculture which we all hope to attain. To deny the farmer such opportunities for organized self-help as I have just indicated would be to deny him that opportunity of collective bargaining which is enjoyed in one form or another by other groups. . . . Producers must be willing to build from the bottom up. They must forget any petty quarrels between local leaders and organizations, and federate their locals into regional and national organizations handling large volumes of business. The best minds, experienced in the trade, must head such organizations. With such a set-up, the Government could do much more than it has done. . . . Old as farming is, large-scale merchandising by farmers, which appears essential to future agricultural prosperity, is in fact an "infant industry." It deserves such sound assistance as will enable it to help itself toward growth and increased efficiency. We have steadily encouraged efficiency in agricultural production. We have, through scientific research, enabled farmers to grow several grains of wheat or corn where one grew before. We should not diminish our efforts in this direction, but we should go as far as necessary to make it possible to market the extra grains to the best advantage of the producer. . . . I have not the slightest fear that such activity on the part of cooperatives would be detrimental to the public interest. On the contrary, I believe that it would be beneficial to the public to reduce price fluctuations of farm commodities by minimizing the likelihood of recurring surpluses and shortages in the market.

There can be no doubt as to the sincerity of Secretary Jardine's utterances on this subject; nor of those of some others who have spoken in similar vein. But turns of events and political and other developments have also played their part in it. The conspicuous success of several of the large cooperative organizations has assisted by furnishing example. The educational movement led by Aaron Sapiro, although including some teachings which have proved of dubious merit, has been one of the major influences. Finally, it is probably no injustice to many of the recent converts to the cause of cooperation to say that they have come to espouse it only as the least of several evils, and particularly as preferable from their point of view to McNary-Haugenism and its kind. What happened in Minnesota several years ago has been repeated on a larger scale in the nation. The Non-partisan League party, with a platform calling for a considerable measure of state ownership and operation of terminal elevators and other marketing facilities, had given convincing proof of its power in the state. Suddenly, the regular Republican party became converted to a most ardent faith in cooperative marketing and made it the principal plank in its campaign platform. It saved the situation for them, too—but only for a space—as the then Senator Kellogg and Governor Preus have cause to remember.

WHAT COOPERATION CAN ACCOMPLISH

We need have no doubts that cooperation will accomplish much for agriculture in time. There are some who expect to see large-scale corporation farming as the development which will overcome the handicaps under which agriculture now labors because of the smallness of the operating unit. Agricultural economists expect to see these handicaps more largely overcome, as at present to a considerable extent, by cooperation, by pooling the buying and selling and other efforts of many producers. The volume of business thus obtained will make possible the sorting, grading, standardization, branding and advertising of the product, which is so much needed, and securing the monopoly advantage of special quality. The associated producers will be able to make contracts to provide car lots of uniform product to the chain stores and the other types of organizations that are developing in the retail market. They will employ skilled servants who will supply them with accurate information as to market conditions and production in conflicting areas and with adequate analysis of the price situation; and skilled salesmen who not only know their market and the product which they are selling, but who understand the art of selling.

As for the monopoly advantage of location, the producers in any area will be much more nearly able to protect themselves against unfair competition from the outside in any market which is rightfully theirs by reason of economic advantage; but they will not be able to keep out a product for which some other area in the United States, even though more distant, has comparative advantage. They will be able to prevent buyers from using outside products temporarily to break their market. They will also be able to make use of location advantages that affect quality and type of product. Fruits, eggs, cheese, and other products will be known much more according to the area from which they come than at present.

Patent monopoly will be impossible, but trademarks and brands will be protected.

There will be a much larger measure of control of the movement of the product clear through to the consumer. Prices in the retail market will be kept more in line with prices to producers. A large crop of perishables will move through the market with less glut because prices to consumers will respond to it more fully.

Selling under brands and in standard packages will assure the producer that the consumer is getting a certain quality and paying for what he gets.

Production will be better adjusted to changing economic conditions than at present. Farmers will know much more nearly in advance what the market conditions are likely to be; they will understand better how to make quick adjustments to changing conditions. A growing tendency to surplus production will be headed off before it reaches extremes. This will reduce in considerable part the irregularity in supply. To the extent that it still exists, a more careful analysis of the market, combined with concerted action, will make possible a more intelligent planning of its storage and the distribution of its consumption over the following period. Canning and other processing plants will be provided to care for surpluses of perishables.

There will be similar changes in production, perhaps almost as pronounced as in the selling. The farmers in any area will produce a more uniform type and quality of product. The harvesting of fruit and vegetables will be done according to more rigorous specifications. Associated effort will make possible a high quality of seed and breeding stock. Improved methods or varieties will be tried out promptly and thoroughly and introduced quickly if they prove to be successful. Large-scale equipment and power will be more freely introduced. Hand labor will be conspicuously lessened.

The developments in the sphere of credit and insurance that will be made possible by associated effort will be even more pronounced in some respects than in production and marketing, although it is to be expected that governments will play a large hand in them.

Agricultural cooperation has already demonstrated the foregoing by its growth in the United States. The latest information available is in a preliminary statement of the Department of Agriculture given to the press on Feb. 1 which is to the effect that the cooperative selling associations made sales to the amount of nearly $2,000,000,000 in 1928 and that supplies were purchased cooperatively to the value of nearly $500,000,000. This represents the cooperative business of about 2,000,000 farmers organized into 12,000 cooperative business organizations. Nearly one-half of the farmers participating in cooperative activity are members of more than one organization. In July, the Federal Division of Cooperative Marketing published an estimate of 3,000,000 as the total number of non-members, patrons, shareholders, shippers, and consignors doing business through cooperative associations.

The federal census has collected information as to cooperative marketing by farmers since 1920. If adjustment is made for the decline in prices between 1920 and 1925, it appears that in this 5-year period the volume of cooperative business increased 85 per cent. The increase in the volume of cooperative purchasing was 10 per cent. The period of greatest increase in cooperative marketing was between 1910 and 1920.

Of the cooperative associations reporting to the Department of Agriculture, 31 per cent were handling grain, beans, or rice, 22 per cent were handling dairy products, 17 per cent were shipping or selling livestock, 11 per cent were receiving, grading, packing, or shipping fruits and vegetables, and smaller percentages were handling cotton, wool, poultry, eggs, nuts, and other products. One of the highly developed lines of cooperative endeavor is in the selling of fluid milk. Approximately, one-fifth of the fluid milk used in United States for household purposes was sold cooperatively in 1927. About 60 per cent of this milk was handled through bargaining associations which function chiefly in the determination of the monthly price to be paid by private distributors to the producers. The rest was handled by associations which receive and deliver the milk to private distributors.

Some of the outstanding examples of success in cooperative marketing are the California Fruit Growers' Exchange, whose business totaled $96,000,000 last year, the Staple Cotton Growers' Association, whose annual business averages $20,000,000, the Land O'Lakes Creameries, Inc., whose business totaled $48,000,000 last year, and the Canadian Cooperative Wheat Producers, Ltd., whose sales of grain last year totaled $283,000,000. In the purchasing field, the Cooperative Grange League Federation, Inc., of Ithaca, New York, and the Eastern States Farmers' Exchange of Springfield, Mass., are the two largest organizations. Both of these specialize in open formula, dairy and poultry feeds, seeds of known origin, and high-grade fertilizers. The American Farm Bureau organizations in 10 states have set up large-scale buying associations. A considerable part of the cooperative purchasing is done by supply departments of cooperative selling associations such as those of the California Fruit Growers' Exchange and the Land O'Lakes Creameries, Inc.

Cooperative marketing has, very largely, failed with tobacco in the United States and likewise with potatoes, although there are a few organizations which are reasonably successful with potatoes. One group of associations, combined for selling purposes into the Pacific Egg Producers, has been conspicuously successful in the handling of poultry products.

Cooperative marketing of cotton began in 1921, when four associations were organized and handled 4.4 per cent of that year's crop. By the 1923 to 1924 cotton season, a total of fourteen cotton cooperatives had organized, and in that year handled 923,562 bales, or 9.2 per cent of the total production. Membership and volume of business increased until 1925 to 1926, when 280,000 members marketed 1,472,348 bales cooperatively. Both membership and volume decreased considerably in 1927 to 1928, since many of the members did not renew their contracts for a second marketing period. The volume handled in that year was 840,000 bales, or only 6.5 per cent of the total crop. The liberal provisions of the new contract, providing short-time pools and a withdrawal clause, and the better business methods adopted, are now winning support again, as is evidenced by an increasing volume of business. Up to Mar. 15, 1929, the fourteen large-scale cotton cooperatives had received about 1,125,000 bales or approximately 8 per cent of the current crop.

In grain marketing, the greatest accomplishments have been achieved by farmers' elevators. Progress in terminal marketing by farmers has been slow, but the developments of the last few years have been more encouraging. The wheat pools which had lost business for several years have recently made changes in operating policies which appear to be meeting with more favor. The acquisition of country and terminal elevators by several associations is also resulting in additional business. The eight central marketing associations operating wheat pools handled only 12,000,000 bushels of wheat last year. The high-water mark thus far reached in the wheat pooling in the United States was 27,000,000 bushels by twelve associations in 1923 to 1924.

Another type of terminal grain-marketing association, the cooperative commission agency, has come rapidly to the front in recent years. These organizations function principally as sales agencies for local farmers' elevators. During the crop year of 1927 to 1928 they handled 36,000,000 bushels of grain for 1,153 elevators.[1]

As an extreme example of what associated effort and large-scale organization can accomplish in the field of marketing may be mentioned the combination of the Land O'Lakes Creameries, Inc., and chain-store organizations with which it has made contracts in the East. At present writing it is possible to buy butter from the Land O'Lakes Creameries, Inc., from chain stores in greater Boston at 57 cents per pound, while butter no better is being sold by other retail stores for prices, in some cases, as high as 70 cents a pound. That the foregoing statement is correct as to quality of the butter is proved by the fact that other retail stores are actually selling Land O'Lakes' butter under other brand names at 70 cents per pound. At present, the gains from this large-scale organization are being most largely realized by the consumers who have learned to buy their butter from these

[1] "The Present Status of Farmer-owned Grain-marketing Associations in the United States," U. S. Dept. Agr. (Preliminary Report.)

chain-store organizations; but it is only a question of time when enough consumers will have learned this so that more of the gain will be reflected back to the producers' organization.

IMMEDIATE POSSIBILITIES

But how much of all the foregoing can be accomplished in the near future in time to offset, before it is too late, the disadvantage of 10 to 15 per cent in the purchasing power of net income under which agriculture is now laboring? The author was asked a question similar to this 5 years ago for the state of Minnesota at a time when a program was under way to consolidate the small local units into large-scale central marketing organizations. What he wrote at that time was as follows:

> No one really has any basis for predicting the amount of such gains. But if promoters are going to make heroic guesses on the subject, students of cooperation owe it to the public to do the same. The gains will vary greatly as between commodities because of differences in the degree of organization of the present market for them. As a sort of rough average of all commodities, the author believes that the potential gains on Minnesota products from several of the most important possible improvements in our marketing system, or in production as it relates to marketing, rank in importance about as follows:
>
> 1. By stabilizing production: adjusting it to changes in demand and to changes in the business cycle, and eliminating cycles of production.
> 2. By improving the organization and management of the locals or in other ways performing the local market functions more efficiently.
> 3. By improving the quality of production by standardization of varieties, better selection and treatment of seed, better care of the crop, better harvesting methods, etc.
> 4. By controlling the time of movement to market.
> 5. By better sorting and grading.
> 6. By better distribution between markets.
> 7. By advertising, especially advertising of an extra large crop, and by developing new markets.
> 8. By securing equality or better in the matter of bargaining, and taking away from buyers any possible monopoly advantage they now enjoy.
>
> Obviously, the ranking of these eight points for butter is much different from the ranking for wheat, corn, livestock, or potatoes. Also

the ranking for Kentucky, Texas, or California would be different from that for Minnesota.

Also, the foregoing ranking is on the basis of potential gains, not probable gains. Although potential gains from stabilizing production are great, the probable gains from this source are not very great in the next few years—this is a problem for generations, even centuries. As to gains reasonably possible in the next 10 years, the ranking would be more as in the second column of Table 34 following. As to gains probable in the next 10 years, the ranking will be more as in the third column of this table. The reason that No. 4 is put so far down in the last list is that in the next 10 years, in view of our present understanding of the problem, the mistakes that will be made may entirely offset the gains.

TABLE 34.—ESTIMATED RANKING OF SOURCES OF GAIN FROM CENTRAL MARKETING COOPERATION IN MINNESOTA

Sources of gain	Potential gains	Possible Gains in next ten years	Probable Gains in next 10 years
Stabilizing production	1	7	8
Improving the locals	2	1	4
Improving quality produced	3	4	3
Controlling flow to market	4	2	6
Better sorting and grading	5	3	1
Better distribution of product	6	5	2
Advertising and developing markets	7	6	5
Price control (monopoly and bargaining)	8	8	7

The probable gain to producers and consumers in the next 10 years from these eight sources will probably range for the various Minnesota products from less than 2 per cent to more than 10 per cent, with an average of less than 5 per cent. It must be remembered that livestock, grain, and dairy products constitute the bulk of Minnesota's production, and upon these commodities the gains will be relatively small. Of this 5 per cent or less of gain thus so boldly predicted, the producers will receive the larger part, especially if other states and other countries fail to make equal improvement in their marketing of the same products.

It is now apparent that events have proved the foregoing predictions as too optimistic. Some significant gains have been made in the case of creamery and livestock marketing. Cooperative grain marketing in Minnesota is as it was, except that the local elevators have for the most part recovered from their severe reverses of 1920 to 1922, and are offsetting the smaller volumes of grain received, as a result of the diversification program of the members, by handling farm supplies and performing additional services for farmers such as feed grinding and seed cleaning. The problem of marketing eggs and poultry from farm flocks cooperatively has proved more difficult than anticipated. The attempt at large-scale potato marketing failed miserably after 1 year.

For the United States as a whole, we can be less hopeful than for a state like Minnesota. Not so many of the farmers elsewhere have had experience with cooperative marketing. The commodities produced or the markets supplied do not furnish as good a basis for cooperative handling as do the types of commodities produced in Minnesota.

Perhaps the cooperative-marketing program can be hurried somewhat. At this point, let us mention only the proposals which have been brought before Congress having such a purpose in view. First, is the McNary-Haugen proposal which virtually amounted to compulsory pooling. All growers of cotton and certain other products to which the export-dumping scheme did not seem applicable were to be required to stand an assessment of so much per unit of product, which was to be used in financing the holding and subsequent selling of cotton. The Canadian wheat growers, after a bitter struggle, finally succeeded in getting the three western provinces to authorize compulsory pooling; but the plan never went into effect, principally because none of the men in whom the grain growers reposed confidence were willing to undertake the task of directing such a program. The wheat growers, under the inspiration of Aaron Sapiro, finally developed a wheat-pooling system as a substitute which realizes to a degree the same ends as the compulsory pooling had in view because the pools handle so large a part of wheat. Assuming that compulsory pooling would be accepted as constitutional in the United States, and could be worked successfully, it would solve the problem of weather and season surpluses, in so far as these are a problem, and to the extent indicated as probable in Part

II. The marketing organization would obtain the necessary control of the product and have the necessary finances to handle the storage and selling operations. If an undertaking of this kind were poorly managed, or even just indifferently managed, it would probably wreck the whole scheme and the cooperative organizations with it. One has a right to reasonable doubts as to whether the cooperative organizations in the United States, in general, have had enough experience in trying to achieve orderly marketing in order to succeed with it. The notions which many of the farm leaders and even some cooperative officials have with respect to the possible gains from withholding and from various price insurance plans that have been proposed, make one dubious as to whether they appreciate the problem sufficiently to undertake a venture of this sort. The Canadian cooperative wheat growers have managed their undertaking with discretion of an unusual order, but good fortune has also played no small part in their success thus far.

Another line of attack proposed is to strengthen the existing cooperatives by loans and in various ways let them handle the surpluses. It is commonly believed that efforts of this sort are futile unless the cooperatives control nearly all of the supply of the product in question. This is a mistaken idea and represents a confusion with the monopoly-control idea which too many of our farm leaders have imbibed from Mr. Sapiro and various other sources. Nevertheless, it is important that the cooperative organization have control of a considerable portion of the crop, frequently as much as half of it. It ought to be in a position to function as a very large operator in the market. If it is, and the produce outside the organization goes on to the market early, at a price which the association has very strong reasons for believing to be too low, it can sit back and let the non-members sell out, and still be reasonably sure of a market later; or if the non-members think the price is too low and refuse to sell, the association will then be in a position to reap an advantage. It is at once apparent that not enough of any one of the staple crops is under cooperative control in the United States to make any proposal to aid existing cooperatives of any significance so far as the near future is concerned.

A third type of proposal involves setting up quasi-public corporations of various kinds to work with and through the cooperatives so far as possible in stabilizing the market. This will be discussed in the next chapter.

The final conclusion to which we must come is that although in a period of several decades and more, cooperative action may contribute in a very important way to agricultural betterment, its help during the next 5 or 10 years will not go very far toward relieving the present pressing situation. We shall have to wait until we can make out cooperative organizations stronger than they are at present.

CHAPTER XV

STABILIZATION CORPORATIONS AND OTHER QUASI-PUBLIC AGENCIES

The agencies discussed in this chapter are called quasi-public because, although having many of the characters of private corporations and cooperatives, they are to be set up by special enactment of Congress, endowed by Congress with special powers, and provided with funds out of the public treasury; and will always be under an unusual measure of public control of the same general sort as are the Federal Reserve and Farm Loan systems.

We surely must begin our discussion of agencies of this type by briefly reporting upon the one which is now functioning in the field of agriculture and handling a product with whose problems we are familiar; namely, the New Zealand Dairy Export Control plan. This was authorized under a special act passed in 1923, which set up a Control Board whose duties broadly defined were to control the export and sale of butter and cheese in the interests of the producers. The act was approved through a referendum vote of a majority of the dairy producers. The government reserved the right to appoint two of the twelve members of the board. Funds for the administrative expenses of the board are provided by levies of a very small fraction of 1 cent per pound on the butter and cheese exported. Over four-fifths of the butter and cheese produced in New Zealand is exported, most of it to Great Britain. Fully 90 per cent of the dairy plants are cooperative; but up to this time there had been no centralized control of the marketing.

The Control Board did not undertake actually to pool the butter and cheese until August, 1926. In November a bad break in the market led the board to adopt a plan of meeting with a committee of importers in London and naming minimum selling prices. But opposition to this developed quickly, and in July, 1927, a resolution was passed abandoning pooling and control of the product. The present program of the board includes the following activities: Regulating the shipments of produce overseas by adjustments of quantities throughout the season, supervising the unloading and handling of the produce, supervising the cold storage in Great Britain, collecting insurance on all produce, improving quality, and advertising. Most significant of these activities from our point of view is the effort to regulate shipments.

The various stabilization plans proposed in the United States have all been tied more or less with cooperative marketing. They have been framed so as to use cooperative marketing organizations where these exist, in some cases to organize new ones where none is in existence, and in all cases to supplement the cooperatives with boards and councils, clearing associations, terminal associations, or stabilization corporations of various descriptions.

The least radical of the various proposals was that embodied in the Capper-Haugen bill introduced in the winter of 1925, embodying the recommendations of President Coolidge's Agricultural Conference. This provided for a ''Federal Cooperative Board'' which was to make surveys in advance of the organization of new cooperatives, inspect those already in existence, and issue certificates of registration for those satisfying certain requirements. The theory upon which this measure was based was not so much the supplementing of existing cooperatives as supervising and strengthening those already in existence. The idea which dominated the conference was that cooperative marketing was in a bad way, and that most of the large cooperatives were skating on very thin ice. The member of the conference who was looked upon as the authority on cooperation was Ralph Merritt of the Sun Maid Raisin Growers' Association, and it is not difficult to understand why he had such a set of ideas on the subject. Nothing in this plan involved the setting up of a corporation of any kind, although it did arrange for the operation of clearing associations for the purpose of distributing produce between different markets in such a way as to prevent gluts and shortages. This proposal was opposed by the cooperative associations on the ground that they did not wish to be government supervised, and that it really provided no machinery of any kind to assist them.

The most unreal of the proposals was that of B. F. Yoakum, which was fathered by Senator Curtis through several sessions of Congress. Mr. Yoakum proposed to organize 75 per cent or more of the producers of each commodity in the United States into a nation-wide organization with a federal charter, which would proceed at once to set up a "marketing board" whose duty was to be to feed the commodity to the market in an orderly manner and thus stabilize prices. The necessary funds were to be collected from the members on the basis of their volume of sales. A general federal board was to integrate the activities of the various commodity organizations.

The McNary-Haugen plan, as already explained, took on cooperative marketing as one of its essential phases in the winter of 1926. For commodities whose export surplus was to be sold abroad at the world price, it provided that the Federal Farm Board would make export contracts with cooperative associations where they existed. For other commodities, an equalization fee was to be collected and paid into a stabilization fund, which was to be used in promoting orderly marketing. Provision was also made for loans to cooperative associations.

Secretary Jardine's ideas on the subject of orderly marketing seem to have been carried over from the days of President Coolidge's Agricultural Conference. The bill which has been introduced into Congress which can be said to include most nearly the Jardine plan is the recent McNary bill (S. 4602). One can also obtain a good understanding of what he had in mind from a series of three articles, one in *The Farm Journal,* released Aug. 15, 1927, one in the *Oklahoma Stockman and Farmer,* released Nov. 1, 1927, both of these bearing the signature of the Secretary of Agriculture and, finally, a rather carefully worked out article in the *Washington Sunday Star* of Aug. 21, 1927, which has every evidence of having been worked up in close cooperation with the Secretary's office. It was called the "Scope of the Jardine Farm Relief Plan." The essential feature of this plan is embodied in the following description from the first of the three articles: "commodity stabilization corporations operated by the farmers themselves or by their marketing organizations under the general guidance of a Federal Farm Board." Thus Secretary Jardine's device for handling surpluses is the stabilization corporation which Herbert Hoover espoused in his campaign addresses.

A more definite idea of this plan may be obtained from the following statement in the *Oklahoma Stockman and Farmer*:

> There should be a Farm Board, consisting of able men who understand agriculture and are sympathetic toward its problems. Members of this body should not be sectional in the narrow sense of mere representatives of groups and classes to the exclusion of the general public interest.
>
> This board would be a recognition of a public responsibility toward agriculture, in encouraging sound business methods in agriculture and in minimizing price fluctuations due to unpreventable surpluses and shortages.
>
> This board would be backed by two main supports: First, a more adequate statistical service, supplying timely information on supply and demand factors affecting the production and marketing of each major commodity. Second, a revolving fund from which the board could make advances to commodity organizations.
>
> The activities of this board, in addition to enhancing the growth of sound organization in every practical way, would fall under two main heads: First, to aid in minimizing price fluctuations due to unpreventable surpluses; second, to help in adjusting production to market demand.
>
> There would be established for each major commodity a stabilization corporation, with a nominal capital stock owned by properly organized commodity cooperatives. When an exceptional season resulted in a crop surplus, the stabilization corporation under the general guidance of the Farm Board would take part of that surplus off the market to prevent the price from dropping to an abnormally low level.

Also the following statement from *The Farm Journal* article:

> In the case of fruits and other perishables, we have plenty of evidence that some markets have been glutted and others undersupplied on the same day. It should be possible to prevent this by joint effort through clearing-house associations properly organized and well managed.

Secretary Jardine's notion as to how this machinery would function may be obtained from the following statement in the *Oklahoma Stockman and Farmer:*

> On the basis of the best available statistical evidence, the Stabilization Corporation under the general direction of the Farm Board

> would have ascertained the maximum which the corporation could have paid for cotton without taking undue risk of losing money on it. The corporation could then have bought cotton in the open market, from members and non-members, continuing to buy until the market price had risen to the conservatively established maximum.
>
> This maximum or objective price should be announced to the public before the corporation begins to buy. Obviously, the intention to announce it would have to be guarded as carefully as our crop figures are guarded now before they are released. In my opinion it would ordinarily be necessary for the Stabilization Corporation to buy comparatively little to cause the price to rise to the announced maximum. If this were conservatively arrived at—and it must be that to be safe—the competition in the trade would of itself cause prices to rise toward that limit.

Secretary Jardine illustrates the foregoing by applying it to the 18,000,000-bale cotton crop of 1926. The statistics which he used are the following: Prices averaged slightly less than 11 cents from October to January and around 15 cents in the following June and July. Approximately 61 per cent of the crop was marketed from October to January. If the cotton Stabilization Corporation had announced its intention to take enough cotton off the market to raise the price to 15 cents a pound, the price, according to Secretary Jardine, would very shortly have risen to this point, at the most not over 3,000,000 bales of cotton need have been bought, and the average price which the corporation paid for it might well have been something less than 14 cents a pound. If it had been 14 cents a pound, the producers would have received 3 cents extra per pound or $165,000,000 for their 1926 cotton crop. The purchasing of the 3,000,000 bales would have been financed for the most part out of advances from the intermediate credit banks up to 65 to 75 per cent of the purchase price of cotton and the rest would have been handled by an advance out of the revolving fund mentioned above. When the 3,000,000 bales were sold the following summer or later, the Corporation would get the funds back with which to repay the loans and replenish the revolving fund. A storage cost of 1½ cents per pound for the season is assumed. If the purchase price averaged 14 cents, then the selling price would have needed to average 15½ cents if the Corporation was to break even. As a matter of fact, prices rose to 20 cents a pound the next year.

Hence the Corporation would have made a profit of from 3 to 4 cents per pound, or a total of from $45,000,000 to $60,000,000 on its 3,000,000 bales. Secretary Jardine would have at least one-half of these profits put into a reserve fund to meet possible losses in other years. The rest he would have paid to the cooperative associations which he expects will constitute the membership of the Stabilization Corporations in most cases, if not immediately, then very shortly. The cooperatives would pay these profits out as patronage dividends. This will have the effect of inducing additions to their membership. To be sure, these profits will have been made on non-member as well as member cotton bought and sold by the corporation; but the non-members will have no cause for complaint because they will already have received 14 cents a pound for their cotton in place of 11 cents.

The plan as outlined provides that the Stabilization Corporation will go into the market and buy only when there is evidence that the crop is so large or the marketing in the autumn at so rapid a rate that the price is unduly depressed. There will be losses in some years, of course; but the reserve built up in other years should take care of these.

> Should unforeseen circumstances in any year cause a loss so great that the reserve would not be sufficient to pay it, the account between the Stabilization Corporation and the revolving fund would remain open, to be paid out of gains in succeeding years . . . no assessment is contemplated against the individual cooperatives.

Now comes a question of the disposal of the 3,000,000 bales taken off the market in the year of large crop. Secretary Jardine's statement is not very clear on this point; but he believes that if it were sold gradually in the latter part of the succeeding calendar year it would not depress the price as much as if a succeeding crop were 3,000,000 bales or larger; that once the cotton gets out of the hands of the producers and into the hands of the trade, part of it as partly finished or even finished cotton goods, that it does not have the same effect on the price as new cotton coming on to the market in the following year. As to whether 3,000,000 bales in the hands of the Stabilization Corporation will depress the price more than if in the hands of the trade, he makes no observation in either of his articles. His discussion is more in terms of the *rate of selling as determining the level of* *prices* at any time than in terms of the effect of the total supply on the price.

We now have the Stabilization Corporation plan sufficiently before us so that we can analyze it. The first observation to make concerning it is that Secretary Jardine and the proponents of it have failed to allow sufficiently for the effect of the enlarged carryover on prices the year following. A reasonable assumption is that 3,000,000 bales of cotton held by a quasi-public corporation would affect the price in very nearly the same way as if it were that much extra production the second year. There are as good reasons for thinking it would have a stronger as a weaker effect. When this effect is taken into account, and if the analysis and data in Chap. V are reasonably correct, the growers would lose more on the second crop than they would on the first, both in gross values and net values. The corporation itself would gain only in the years when a short crop followed a large one. Even a normal crop the year following would cause the corporation to lose money. Holding over large crops of wheat would be equally costly. In fact, the whole theory of gains to be made merely by enlarging the carryover of a large crop is fallacious. And Secretary Jardine must have more than half realized this when he suggested the following as a statement to be issued to the growers following such an enlarged carryover:

> You produced 47,653,000 acres of cotton this year (1926). The normal yield is 156 pounds. If you harvest as many acres next year (1927) and get a normal yield you will have about 15,000,000 bales to harvest in 1927. On top of that, our Stabilization Corporation is holding the 3,000,000 bales which we took off the market to save you from an extremely low price in 1926. This means that if you produce as many acres next year as last year and get the normal yield we shall have in all about 18,000,000 bales to market in 1927. That quantity cannot be sold unless you take 10 to 12 cents for it. If you go ahead on last year's basis, you must face low prices. Put in fewer acres for the 1927 crop.

If a surplus of 3,000,000 bales due to abnormal yields and acreage reduced the price to 10 to 11 cents in one year, and would also reduce it 10 to 12 cents next year if it were sold on top of a normal-yield crop on the same acreage, why should anyone take the trouble to buy it up this year and sell it next year? The reason that the trade does buy up some of a large crop and carry it over, standing the cost incident thereto, is that, as pointed out earlier, in a majority of such situations, both acreage and yield are considerably reduced in the year following.

Reducing the acreage the year following is therefore a necessary accompaniment of a program of enlarged carryover. Table 13 in Chap. V showed that cotton growers would gain almost regardless of yields the year following from such a contraction program if it was carried out successfully. But it is proper to ask how much more successful such a program of reducing acreage could be in combination with an enlarged carryover than without it. The stimulus to reduce acreage because of having received low prices would be partly removed; and there would still be the tendency to expect the other fellow to do the reducing, or to take a chance that yields would be poor the year following.

As for the wheat growers, Chap. V showed that they would lose in spite of reducing the acreage the year following enlarged carryovers of large crops.

If the objective is to raise the growers' incomes from cotton and wheat and most other crops, the program should be enlarging the carryover of small rather than of large crops. But the holding corporation would lose heavily from such a program.

If the objective is to stabilize growers' incomes, it can be done by adjusting the carryover each year to the size of the crop and trends in production and consumption in the manner pointed out in the last section of Chap. IV. But the growers would get lower average prices in consequence, and the holding corporation would lose money. The combined losses would have averaged 2.5 per cent of the value of the cotton crop from 1899 to 1913. But the accompanying advantages of stabilization of production and income may be worth all these losses in price and losses of the corporation.

It follows from the foregoing that a stabilization corporation could not finance itself out of its operations except in occasional years. The years 1926 and 1927, selected by Secretary Jardine to illustrate his plan, would have been one occasion when the corporation would have made a little money. But Mississippi floods do not commonly follow the biggest crop in cotton history. The holding program on this occasion, as pointed out in Chap. V, would have caused the growers to receive $27,-

000,000 less for their two crops, which is more than the corporation gained.

Secretary Jardine's analysis also fails to take account of the occasions when two or more large crops follow in succession—except in so far as he proposes to prevent such an event by getting the acreage reduced.

Following are a list of other statements with respect to the stabilization corporation plan as outlined by Secretary Jardine which help to establish its place in the program of agricultural reform:

1. It is not at all a *price-raising plan.* Its proponents have thought that it would be in the sense that it would raise the average price a little as a result of a better distribution of the selling; but in this they are mistaken if our foregoing analysis is sound.

2. It is a *price-fixing* plan in a more real sense than any of the plans discussed in Part III. It proposes to determine by an analysis of supply and demand conditions a definite price which the board thinks should prevail during the year and actually establish this price by market manipulations. There would be no intent, it is true, to make this price higher than what the board conceived actual supply and demand conditions to warrant; but nevertheless it would name a definite price and seek to impose it.

Such a procedure would be exposed to the difficulties that have confronted the cooperatives that have attempted to name a price that would move a crop to the greatest advantage to the producers. The California raisin growers and many other cooperative groups have experienced a vast amount of grief with undertakings of this sort. A body of information is needed as to conditions of supply, consumption and demand which is not yet available in sufficient quantity and accuracy. Students of prices have not been able to analyze the factors determining price with sufficient care in most cases to make a program of this kind very safe.

Moreover, the Stabilization Corporation proposed is to be an organization of all the cooperative associations handling a given commodity. The decisions as to price which it would seek to establish would be entirely its own. They would not be subject to review by the board. The plan would grant these cooperatives the power to operate as a unit in the market on a large scale. They would represent, it is hoped, the bulk of the production in their commodity. Is one not safe in saying that there would be very great danger that such a corporation would attempt a measure of monopoly control of prices and wreck itself in consequence?

3. At the best, the success of stabilization corporations would depend very largely upon their ability to forecast the price of the product. What is reasonable to expect along these lines has already been fully discussed. It is interesting to remark at this point that it was only very recently that the Secretary of Agriculture issued orders to the Department of Agriculture to cease forecasting the price of cotton; and it afterward turned out that the forecast was right. Production really needs to be forecasted as well as prices, if possible a year in advance.

4. Secretary Jardine has in mind that pegging the price at a definite figure would greatly reduce the usual fluctuations of the speculative market. It will be apparent to students of this subject that while it might reduce the number of the minor fluctuations in the years when the Stabilization Corporation chose to operate, it might very well introduce major price movements more serious in their nature. Any time that the Corporation miscalculated on the price to establish, the effects would be much more disastrous than those resulting from the minor fluctuations of the speculative market.

5. After all, a major feature of the program which Secretary Jardine outlined was aid and encouragement to cooperative organization. His own statement on this point is as follows:

> The long-time aim of this plan, beyond that of minimizing price fluctuations, is to build large-scale, farmer-owned business institutions handling the major farm commodities. Future prosperity in farming depends to a large degree on the growth of strong business institutions to afford agriculture a bargaining power comparable to that of labor and industry and to give the farmer a consciousness of business power, a sense of mastery over his affairs, and a better voice in matters of economic policy.

6. The proposal to have a separate stabilization corporation for each product shows the influence of the Sapiro propaganda

in behalf of "commodity cooperation," the same as does the Yoakum plan.

7. The idea of a commodity clearing house to arrange the distribution of product between markets represents a carryover from the days of the Capper-Haugen bill and the agricultural conference. Including in the clearing house organization the representatives of the trade as well as of the cooperatives was a favorite notion of Secretary Jardine's, and expressed itself only last year in his approval of an arrangement of that sort for handling Florida oranges. The experience of the cooperatives with such arrangements has been such as to make most of them opposed to any such organization. The Florida set-up is proving no different from the others.

8. Secretary Jardine's plan as outlined also includes some of the same provisions for supervision and certification of cooperatives that were included in the Capper-Haugen bill. Only those which are properly set up and managed are to be allowed to become members of Stabilization Corporations or to receive advances out of the revolving fund to help them hold their product for a better market or to be assisted in various other ways.

9. The plan as outlined calls for immediate further development of the work of the Department of Agriculture, collecting and analyzing data as to production, prices, shipments, consumption, etc. Secretary Jardine usually exhibited much faith in possibilities along these lines.

10. It also makes clear that the board and the stabilization corporations are to call upon the Department of Agriculture for statistical service and not attempt to duplicate the work of this or any other departments of the government.

We may conclude the foregoing discussion by affirming a belief that there is some advantage to be gained by such a stabilization of prices of many farm products as can be attained by allowing a single large operator to function in the market with such an intent. An operator with certain public prerogatives can accomplish somewhat more than an ordinary private operator. Such prerogatives will be particularly important in the matter of influencing the production in the following years. But its opportunities are far more limited than commonly supposed; and its chances of really helping probably less than its chances of damage during the first 10 years of its history, unless unusually wise management is secured. There are many difficulties that might arise to prove the undoing of any stabilization corporation. It seems to the author that its chances would be better with programs of holding during the year than with programs of enlarged carryover.

There are advantages in having such corporations stand on their own feet without recourse to government aid in case of losses. But they must be set up on such a basis as to have an assured income. There are also advantages in having them entirely private in their directorships. On the other hand, one may question whether they will not need the restraining influence of men who have no stake in the price for which the commodity in question is selling. They certainly will need the services of non-interested specialists in analyzing the market.

The Stabilization Corporation, or something like it, seems to be the most logical agency to attack the problem of season surpluses and to offer some possibilities for the handling of weather and overplanting surpluses. It is high time that we undertook some experiments along this line. But we must not be oversanguine about the results. We must live and learn.

PRICE CONTRACTS

The report of the Business Men's Commission published in November, 1927, supported the Stabilization Corporation idea of Secretary Jardine's if applied only to cotton, wheat, and perhaps corn, and in addition suggested experimenting with the system of contracting in advance of planting to pay a certain minimum price for the crop. This contract-price idea has been hanging around for a long time. It was proposed during the World War as a scheme for securing sufficient volume of production for certain crops. It was no doubt suggested by the practice of beet sugar and canning companies of contracting acreage at a definite price. Following is the recommendation of the Business Men's report on this subject:

> Cotton, wheat, and perhaps corn appear to be the only commodities in which stabilization corporations of this sort could successfully operate, at least at the outset of the experiment. As these corporations became strong enough and gained sufficient experience, it might be possible for them to carry price stabilization one step beyond the mere

handling of emergency surpluses due to weather conditions and to attempt the gradual control of production, so far as this can be accomplished by influencing planting intentions and programs. To this end it might eventually be possible for these corporations to announce in advance of the planting of crops a price at which they would stand ready on a specified date after the production of the crops in question to purchase any surplus which might then be offered, this price being such as would induce the desired proportion and volume of the crops concerned. The Commission does not feel that the stabilization corporations could wisely undertake such action at the outset and perhaps not for a long time. It hopes, however, that if these corporations for the handling of emergency surpluses are organized and successful, they may find it possible gradually and tentatively to experiment with such action.

The difficulty confronting the price-contract scheme is that even if the acreage is normal, a large yield might force a corporation to buy up a considerable fraction of a crop and hold it over to the next season. The corporation might be in the position of carrying over a much larger fraction of a large crop than was good economy. The minimum price might be too high to allow utilization of such a crop at as rapid a rate as would be desirable. The Jardine plan proposes to announce a minimum price after the crop is grown and the yield established, and is thus on far safer ground. Placing the minimum price considerably lower than would be ventured at the end of the harvest would make a venture of this kind considerably safer, but then it would not insure the growers very much against low prices from weather surpluses. But this may not be so important a matter as stabilizing acreage. The analysis in Part II showed plainly that it is only the very large crops which reduce the incomes of the growers so severely as to be serious. This plan provides better control of the next planting than does a simple holding plan, since the corporation will be in a position to announce a minimum which is low enough to take care of the large carryover. This ought to serve as more than a warning. Obviously, it was this feature of the proposal which appealed to the Business Men's Commission. It is only fair to the Business Men's Commission to emphasize its statement that it is advocating only experimenting with such a program. The author is also inclined to believe that some experimenting along these lines would be worth while. The great danger would be the forcing of too large a carryover in case of very favorable weather and a large yield.

PRICE INSURANCE

The last two versions of the McNary-Haugen plan authorized the Federal Farm Board to provide for public insurance of cooperatives against decline of price of the product between date of delivery to and sale by the cooperative. This plan was advanced by O. F. Bledsoe of the Long Staple Cotton Association and accepted by the supporters of the McNary-Haugen legislation because some of their influential friends wanted it. Mr. Bledsoe's own statement of it before the Committee on Agriculture in January, 1927 is remarkably clear and concise.

> Statistics for a period of 20 years show that with certain explainable exceptions the average price of cotton during the period that farmers usually sell their cotton, namely, from Sept. 1 to Dec. 31, is lower than the average price for the 12 months beginning Sept. 1 and ending Aug. 31. Some of us who have been studying this matter are convinced that it would redound to the substantial gain of cotton farmers if a plan of insurance against price decline during any one cotton crop year could be put into effect.
>
> Under the plan which I propose, the cooperative cotton associations would be guaranteed that their weighted average daily spot price during the delivery period, *i.e.*, from Sept. 1 to Dec. 31, would not be less than their weighted average selling price for the year; and consequently such associations would be able to pay their members approximately the full spot-market price for their cotton at the time of delivery less carrying charges.
>
> Statistics which I have compiled show that such a guaranty could safely be made by a government agency to the cooperative associations in consideration of the payment of a premium of one-fifth of a cent per pound. Under this plan the member would receive, as indicated, approximately the spot market price for his cotton on the day of delivery, and if the average annual price of cotton should be higher, he would receive the benefit of this higher price. The premiums paid by the association would be used to reimburse the association for losses that may occur and to provide a reserve for any future losses.
>
> The statistics to which I have referred are the average daily spot price of middling cotton on the New Orleans Cotton Exchange from

Sept. 1, 1905, to Aug. 31, 1925, a period of 20 years. During 15 of these 20 years the seasonal trend of prices was upward; *i.e.*, the average of the prices during the selling season was higher than the average of the prices during the farmers' marketing season. The years 1907 to 1908 (during which we had a money panic), 1913 to 1914 (beginning of the World War), 1918 to 1919 (signing of the armistice), 1920 to 1921 (the period of deflation), and 1923 to 1924 (an underestimate of supply and an overestimate of demand) showed a downward trend.

For the season 1907 to 1908 there was a loss of 34 points, or $1.70 per bale. For the season 1913 to 1914 there was a loss of 87 points, or $4.35 per bale. For the season 1923 to 1924 there was a loss of 88 points, or $4.40 per bale.

The loss for the season 1920 to 1921 is excluded for the reason that a contingent liability from deflation does not exist at present. There is no inflation now, as is conclusively proven by the fact that the price of cotton is under the 20-year average.

Inasmuch as it is proposed that these insurance contracts be entered into annually and run for only 1 year, contracts made during such abnormal conditions as existed in 1920 to 1921 would need to be given special consideration.

Excluding the season of 1920 to 1921, the average annual loss for the 19 years included in the calculation is 56.6 cents per bale. A premium of $1 per bale, or one-fifth of a cent per pound, would provide for the usual losses and allow a considerable margin, which should be placed in a reserve to take care of unusual conditions. I would suggest a premium of $1 per bale, which is practically double the actual loss.

The underwriters of this contract will be taking the position that the cotton trade of the world is right to the extent that they will at least get back the price they paid for cotton, without carrying charges, storage, insurance, and interest.

The benefits to be derived from this plan are: (1) Banks can safely advance to the cooperative associations the spot-market price for cotton on the day of delivery, less carrying charges. (2) Cotton cooperative associations and their members will be insured against losses in connection with the orderly marketing of members' cotton. (4) Members of the cooperative associations, in the event of gains accruing through their associations obtaining higher prices for their cotton than were paid to them on the day of delivery, will receive such gains. (5) Due to the fact that the member is paid approximately the full market price for cotton at the date of delivery, and, hence, subsequent partial payments will be unnecessary, operating expenses of cooperative associations would tend to be reduced considerably. (6) Due to the fact that the producer is not guaranteed a specific or artificial price, but only against a seasonal decline in a price based on supply conditions, the tendency to stimulate production in excessive quantities is not present under this plan. (7) All of these factors would combine to strengthen the cooperative associations and to promote the orderly marketing of cotton. In other words, it would give the cooperative marketing association financial and insurance facilities that other distributors have.

One other detail of the plan in operation was explained by Mr. Bledsoe in response to questioning. The individual growers would receive upon delivery of their cotton the New Orleans spot price for that day less the cost of carrying the cotton to time of sale, an amount estimated by Mr. Bledsoe at 2 cents per pound.

Mr. Bledsoe wished to have this substituted for the equalization fee arrangement for cotton, but was very willing to have it included in the McNary-Haugen bill. The data which he submitted in support of it were compiled for him by the certified public accountants Ernst and Ernst. The decline in price for the year 1920 to 1921 which Mr. Bledsoe omits was $27.30 a bale. Including this decline with those of the other 4 years would have made the average loss for the 20 years $1.90 a bale. A margin of safety of 100 per cent would have raised the insurance fee to 0.75 cent per pound for cotton.

Any price statistician will realize that this 20-year series of prices needs to be corrected for a pronounced secular trend. The average price for the last 4 years of this period was 14 cents a pound higher than for the first 4 years of the period. This means that in the course of almost any one of the years the price level was appreciably higher than at the beginning of it. If all such increases were removed, there would have been more years than these five when a decline would have appeared. The big drop in 1920 to 1921 may properly be looked upon as the necessary offset for the accumulating increase in cotton prices during the preceding 15 years. Some of the increase since 1921 includes the same factor. It may be proper to exclude a single catastrophic year such as 1920 to 1921 from such an analysis, but one cannot bank upon a price level constantly rising as during all of these years except one.

It will be remembered that the Ketcham bill included provision for price insurance as one of its attractive features. The Secretary of Agriculture has also indicated that this would be a desirable supplement to a Stabilization Corporation. This means that in all cases the proposal is price insurance combined with plans for handling weather surpluses and orderly marketing generally. Students of insurance usually set up four requirements for an ideal insurance risk. The primary requirement is that the hazard be "not subject to control." It should be clear from our discussion of Stabilization Corporations that their primary intent is to make the price higher in the autumn than it otherwise would be whenever there is a large crop. This would be controlling with a vengeance. If in any year the price was set at too high a figure in the fall, it would be sure to go lower later on. Thus not only would the stabilization reserves suffer severe drains, but the insurance fund would stand in danger of being wrecked also.

The second requirement of a good insurance risk is that the loss be "highly predictable in the aggregate, but not in individual cases." If price levels did not change, it would be possible to predict the probable change in price during a marketing year with reasonable accuracy over a 20-year period. With price levels changing as they are, and prices of individual products afflicted with periods of ups and downs, it is not possible to make such prediction with reasonable accuracy over any period, and particularly not possible to do it for the next 4 or 5 years, which is the period in which the plan is likely to break down.

This requirement may be illustrated by reference to experience in the accident field. New accident insurance companies are constantly starting and failing after a few years, partly because experience in that field is still rather limited, but more largely because accident rates are only moderately predictable. A large accident company carries enough risks so that its too low premiums on some are offset by too high premiums on others. A small company is not so fortunately situated.

This leads to the third requirement of the good risk, namely, that it be "spread over" a large number of scattered cases. The price-insurance enterprise will have essentially one risk each year, which may turn out either good or bad. It is at the opposite extreme from a life insurance company which carries 500,000 separate risks at one time.

The requirement of ''infrequent'' losses is violated by the fact that apparently one can expect prices to decline rather than rise in 1 out of 4 or 5 years in the case of cotton, and probably more than this in the case of wheat and some other products.

The Ketcham and other measures which place the insurance feature on an optional basis letting the Farm Board decide after having made a careful analysis of the product as to the insurability of the risk, are therefore not likely to lead to any action because either the elements of insurability will be found wanting, or the statistical basis for it inadequate at present.

PART V

THE REFORMS

The two preceding sections have been devoted mainly to discussing the mechanism of reform. This last section deals with the reforms themselves. It is considerably broader than the preceding sections because it includes credit, taxation, transportation, immigration, and many aspects of the program of agricultural reform which have scarcely been mentioned in earlier chapters.

There is no pretense of thoroughness in the handling of these subjects. The aim instead has been to throw into relief the high spots of each of them, or to bring to the fore certain features ordinarily overlooked. The treatment is bold, not cautious and wavering—intended rather to provoke thinking and discussion than to settle issues.

CHAPTER XVI

PRODUCTION

More of the proposals for fundamental agricultural betterment have related to production than to any other phase of agriculture. And rightly so. It is in this phase of agriculture that maladjustments have been most conspicious. They have arisen in part from important changes in production economy, such as in interregional competition and in the technique of production. Others have arisen from changes in consumption brought about by inventions and the rising standard of living.

There is always much talk about adjusting consumption to production by means of advertising and in various other ways; but the practical accomplishment along these lines is insignificant. In general, the consumer takes the income which comes to him and disposes of it as he sees fit, and the rest of society adjusts itself as best it can. This is something which economists came to appreciate scarcely 50 years ago. Agricultural people have been slowest of all to recognize it. They are still disposed to produce what they think their land is best suited to in the physical sense, or what they are used to producing or want to produce, and expect the market to absorb the product at a reasonable price. If it does not, then they clamor for tariffs and other price-manipulating devices which will give them "cost of production plus a reasonable profit." But events of the last 10 years have taught them much as to the need of fitting their production programs to the economic situation.

FACTORY FARMS

Let us consider the various proposals that have been advanced for improving agricultural production. The first which we shall name is the favorite of the business men—large-scale corporation farming. The latest expression of this to receive the hearty endorsement of the business world appeared in a pamphlet published by Robert S. Brookings, founder of The Brookings Institution, Washington, D. C. We quote him as follows:

> My own opinion is that the best means of hastening the present slow and harrowing process of agricultural regeneration is by the formation of agricultural corporations which will accomplish in organization and management what big business has accomplished for industry. Following the method pursued in the organization of the U. S. Steel Corporation, the most inefficient farms, which as now operated are worth less than nothing, would be paid for in safe bonds of the "Agricultural Corporation" with some regard for their potential value; and the most efficient farms would receive their full present value in the same bonds, and their efficient managers would become the department managers of the corporation. As these corporations would combine all the advantages claimed by Campbell and Ford for large-unit farming, with the additional advantage in methods of efficient management shown by Professor Mead, I believe they would greatly reduce even the present low cost of production of the most efficient farmers; and that their securities would eventually become one of the most extensive and safest forms of investment for our people, converting the present immense and unprofitable values tied up in farm lands and equipment into an additional means of distributing the national wealth among all the people. While I am personally opposed to any and all income tax exemptions on bonds, if the government wishes to facilitate such a reorganization of agriculture, it could exempt agricultural corporation bonds, as it does land bank bonds, from income tax, under similar restrictions for insuring security.

The Campbell reference in the foregoing is to the 95,000-acre wheat farm at Hardin, Montana, operated by Thomas Campbell after the manner of a gigantic engineering project, producing as much as 500,000 bushels of wheat in some years on one-half of this acreage, the other half lying fallow. Mr. Brookings says of this enterprise:

> It has been so successful at producing wheat in the calculated manner in which industrial corporations turn out other commodities that not only have substantial profits resulted, but remarkably high wages have been paid to laborers during the period of low prices. The corporation has even gone so far as to issue 20 per cent of its shares of stock as a bonus to the skilled laborers on the farm.

Mr. Campbell himself has concluded that "the biggest industrial opportunity today is in agriculture," and predicts that in less than 50 years we shall have a United States Farming Corporation larger than the United States Steel Corporation.[1]

The reference to Professor Mead is to a book published by him in collaboration with Bernhard Ostrolenk from the University of Pennsylvania press in July, 1928, in which the authors conclude that the solution of the agricultural problem is a further increase in agricultural efficiency.

The reference to Henry Ford is to his farm at Dearborn, Michigan, which he operates in combination with his factory by shifting men from the shops to the land and back according to where the need for them is most at the moment; also to Henry Ford's experiments in "his village industries" at Northville, where he has turned an old mill into a valve shop and worked out a problem by which employees work on farms part of the time and in his shop part of the time. Mr. Ford has stated his own theory on this subject in the following way:

> The moment the farmer considers himself as an industrialist, with a horror of waste either in material or in men, then we are going to have farm products so low-priced that all will have enough to eat, and the profits will be so satisfactory that farming will be considered as among the least hazardous and most profitable of occupations.

All students of agricultural economics will concede that there have been some important developments in agriculture which call for a considerable reorganization of the producing unit. Professor E. C. Young of the Agricultural College of Purdue University summarized these as follows in the paper before the American Farm Economics Association last December:

> There has been a rapid increase in the amount and effectiveness of technical information in farming. The wealth of practical information and minute details that have been developed in connection with hog production alone in recent years puts the average farmer at a disadvantage. As this increased technical information becomes more effectively applied in actual hog production, the disadvantage of the poorly informed farmer will become increasingly evident.

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[1] It is appropriate to call attention at this point to the fact that Campbell's first large-scale wheat-farming venture failed, costing its backers nearly $1,000,000.

There is the recently developed field of agricultural economics with its intensely practical information relative to markets, adjustment of production to take advantage of markets, the measurement and coordination of the various factors in production, and its studies of ways and means of increasing the effectiveness of management.

The increased speed and effectiveness of transportation and communication have tended to speed up farming somewhat and have decreased the importance of physical distance as a factor in the situation.

The extreme variability in market prices during this period of readjustment in farming has created at least a temporary situation which gives the farmer with marketing ability a decided advantage. Income studies in central Indiana indicate a much wider variation in income than formerly existed. During the 3 years 1925 to 1927, 5 per cent of the farmers made incomes in excess of $3,000; while during the extremely prosperous war period 1916 to 1918 only 7 per cent made incomes in excess of $3,000. Numerous farmers in this region have testified that the year 1926 was the most profitable in their experience. Yet farming in this region has been generally in a depressed condition.

This extreme variability in income is due in large measure to the wide fluctuations in market prices and the sudden obsolescence of types of farming that formerly proved profitable. Farmers who can analyze the market and who can quickly adjust their farm organizations to take advantage of new opportunities are able to make satisfactory incomes. This factor, which in former years was a relatively unimportant one and in most analyses was not even recognized, now becomes dominant. This situation presents an opportunity in group management that has not previously existed.

The increased use of large and expensive labor-saving machines encourages large-scale farming or group operation.

But do these changes warrant the prediction that agricultural production will presently be organized into large factory-like units? Students of economics and agriculture without a single exception are convinced that the answer is, "no." They believe that large units will operate successfully in certain areas and with certain products, but that the great bulk of agricultural production will not take place on factory farms.

They will say that all Mr. Campbell's experiment proves is that in an area where one crop can be grown continuously on the same land year after year without any use of fertilizer and sold for cash, and this crop requires little work to be done upon it except at two periods during the year—planting and harvesting—and the work can all be done with power machinery, such a method of organization is feasible. Even in the area where Mr. Campbell has been operating, the land probably will not submit to cropping by this method continuously; and when it is found necessary to combine livestock farming and forage production with grain growing, men will need to remain on the farms the year round. When that point is reached, his enterprise is likely to go the way of all other similar large units and fail to make expenses.

While the foregoing is the characteristic answer which students of farm management make to proposals such as Campbell's, few of them want to be so sweeping in their statements as to say that no large units can be operated successfully. They believe that where production can be organized on the basis of one or two crops, or one kind of livestock, depending upon grazing for the most part, or where most of the work can be done by machinery, units of considerable size can be operated successfully. Surely, this has been demonstrated the world over so far as livestock grazing is concerned. Some rather large dairy farms are being operated successfully. If poultrymen can solve the problem of controlling disease in large mechanically operated poultry houses of the sort that are increasing in numbers in the East, there will be an increasing amount of poultry production upon an essentially factory basis.

The basic ideas of the system of farming which Mr. Campbell advocates are sound so far as they go. It is true that as agriculture is organized at present many men are managing family farms who are incompetent and in the same neighborhood are farmers confining their energies to farms little if any larger whose ability is such that it ought to be spread over a much larger area. It would be highly advantageous if they could furnish a considerable part of the management of their neighbors' farms as well as their own. The large-scale unit which Mr. Campbell proposes would differentiate the various grades of management and put that which has high capacity at the very top, and that which has moderate capacity in charge of departments of the enterprise, and use the lowest grade of management for ordinary farm labor. But such a system would change practically all these men from entrepreneurs to hired employees. They would no longer be responsible for the success of the work which they were doing as they are when they are operating their own farms. Past experience has demonstrated that this is almost if not the major consideration.

It is also true that large units of the sort Mr. Campbell proposes are much more likely to take advantage of technical improvements and new discoveries of science and to manage the buying and selling more effectively; but this advantage also is generally completely offset by the loss of entrepreneurship interest.

The factor next in importance is the economy of combining crop and livestock farming in the maintaining of the fertility of the soil. Commercial fertilizer probably will not be able to compete in staple crop production with farm manures and crop rotation. As soon as a system of combined livestock and crop-rotation farming is adopted, operating large tracts in single units becomes difficult. It is pointed out that the cattle and sheep ranches are being increasingly converted into farms which combine crops and livestock.

The extent to which agricultural operations can be standardized is a major factor in determining the balance of the foregoing advantages. With one or two products and very little dependence on the weather, as with a poultry enterprise, and to a lesser degree with a dairy enterprise, the work can be reduced to routine sufficiently so that very little in the way of continuous detailed supervision and readjustment is needed. In the case of large-scale crop farming, although the weather cannot be depended upon to be the same from season to season, one can go so far as to standardize operations on the basis of an average season. In the area where Mr. Campbell operated, rainfall is the only varying factor of importance. However, M. L. Wilson, manager of the Fairway Farms, a chain of farms also in Montana, has found that making quick shifts to forage crops and livestock when small grain fails, and planning the farming system so that these shifts can be made if necessary, adds greatly to the possibilities of successful farming in a semiarid region. The ordinary diversified farming systems of the principal farming regions of the United States lend themselves very poorly to standardization.

CHAIN FARMING

The development in farm organization which is receiving most attention these days is what is commonly called ''chain farming,'' that is, the operating of a string of farms in one locality not too far removed from each other under the close general supervision of a landlord or general manager, with tenants or hired operators in residence on each. It must be made clear at the outset that this system involves more than simply a group of farms leased by an absentee landlord—an arrangement with which we have long been familiar. But such an absentee system might develop into chain farming if a proper leasing arrangement were devised and the landlord employed a competent general manager, or if the landlord himself were able and willing to act in that capacity.

Such a system is by no means new in the United States. Something very much like it has prevailed for a long period in the South under the name of the ''plantation system,'' under which a landlord or his representative manages rather closely the operations of a considerable group of ''croppers,'' that is, farmers who contribute practically nothing except labor and receive their pay in the form of a share of the product. It would now appear that the Corn Belt and some other sections of the United States are turning to the South for a suggestion as to the solution of a problem.

The author studied the records of two such chains, one of 11 farms and the other of 17, in the dairy-farming section of southern Wisconsin in the summer of 1916. The leases were the half-and-half dairy leases common in well-developed dairy regions under which the landlord furnishes one-half of the productive livestock and the feed purchased for it, and the tenant furnishes the other half of the productive livestock, the workstock, machinery and labor, and the proceeds are divided half and half. On both of these chains of farms, the landlord had furnished the cattle from his own herds and had sold a half interest in the herd on each farm to the oncoming tenant, taking a chattel mortgage as security. The cattle were of good producing strains, purebred sires from high-producing dams having been used for many years. Some of the milk cows were purebreds. On both chains, the landlord controlled the feeding, and on one of them also determined the dairy ration, the crop rotation and negotiated all the buying and selling. On the other, these decisions were left to the tenants. Both landlords kept records of the expenses and receipts of each farm. The chain of farms for which the landlord was furnishing the most management was returning the landlord annually from 7 to 10 per cent of the market value of his farms, or a total income of over $11,000 a year after allowing 5 per cent on the sale value of his farms. The other chain was returning the landlord from 4 to 8 per cent of the market value of his farms.

In both cases, tenants in the area were very anxious to obtain one of the farms in these chains, because it was obvious to anyone that chances for prospering were greater on them than on the ordinary farms. Most of the tenants acquired enough property to become owners in a period of from 5 to 10 years. Starting with little or nothing, they ended with a full equipment for a farm, half a herd of high producing cows, and enough savings besides to make the necessary first payment on a farm. The landlords were doing well in both cases, but the tenants were doing even better. The farms were being raised to a high state of fertility as a result of the keeping of so much livestock and the feeding of considerable quantities of purchased concentrates. Upkeep of buildings and fences was a considerable item of expense to the landlords, and more often than anything else was the cause of annoyances.

The landlords, in addition, had profited considerably from the rise in value of their farms. One of the landlords made the buying of run-down farms and building them up under his system of farming an important feature of his undertaking. He had sold several farms at a 50-per cent increase in price after 5 or 10 years. This study convinced the author that chain farming has important possibilities under the leasing system described and with competent general management. It calls for a landlord who is a good manager; but it would seem to reward him much better than operating one large farm with hired labor.

The author also studied a smaller chain in the potato-farming section of the state. On soil which would surely be described as sandy, the landlord had developed a system of combined dairying and potato farming, involving the growing of corn for silage, clover and soybeans for hay, and potatoes for a cash crop, and using a certain amount of commercial fertilizer, which had proved profitable on his own farm. His next step was to buy a neighboring farm and establish a tenant upon it, using the same farming system; and then presently two more farms. His net income from his three rented farms combined was considerably more than from his home farm.

The chain of farms which M. L. Wilson is now managing is in the semiarid portions in Montana, on land of the sort that was abandoned in a period from 1920 on. These farms range in size up to a thousand acres, and the principal crops are wheat and corn. In certain years considerable livestock is fed, and all of them combine more or less livestock with crop farming. The use of power machinery and the handling of a large acreage with a little labor is an essential feature of his farming system. This project was underwritten by one of the research foundations as an experimental or demonstration project, whichever it might turn out to be. Evidence points clearly to the latter outcome.

Chain-farming enterprises in the Corn Belt apparently encounter the difficulty that no leasing system has come into general use which is well suited to it. Professor Young of Purdue University finds that the landlords in Indiana are not willing to go to the expense of providing such farms with livestock and then turning them over to tenants to be managed to the degree that prevails under the usual livestock partnership lease in the area. It does not seem that this is an insurmountable difficulty. It ought to be possible to develop a leasing arrangement that will meet the needs of the situation. Another difficulty is that too many of the landlords are not wanting to give the detailed supervision which is the essence of a chain-farming system.

Professor Young is inclined to believe that the arrangement under which the landlord furnishes everything except the labor, supervises the operations closely, and does all the buying and selling, and pays the tenant one-third of the proceeds at the end of the year, is most likely to work out satisfactorily in the Corn Belt. If such proved to be the case, it would mean that a system essentially like the cropper system in the south would be introduced.

Chain farming can also be developed with hired operators on each of the farms; but it would not generally be successful unless a profit-sharing arrangement can be devised to go with it. No doubt something can be learned from chain-store systems as to this feature of the problem.

Many of the groups of farms that have come into existence recently are the result of foreclosures by banks and insurance companies. It has not seemed best to throw them on the market just at present, and, in consequence, some plan for supervising their operation has come to be needed. In many cases a local bank or real estate man is looking after them in a superficial way for a fee of $1 an acre, or 5 per cent of the gross profits. But such a method results in exploitive farming and is unsatisfactory in many other ways. Hence, an interest has developed in systems calling for closer supervision under a hired general manager.

The advantages of the chain-farming arrangement are easy to discern. It preserves the family and farm combination with the operator living in the center of things, obtaining a considerable portion of his living from the farm and thus keeping down expenses, and utilizing his own family labor to advantage. It makes possible a year-round system of farming providing fuller utilization of the plant. The operator, whether under a leasing or a profit-sharing arrangement, has an important interest in the outcome and is disposed to give careful attention to details. A number of the important advantages of large-scale operation are still available, such as the utilizing of the higher qualities of management. The introducing of improved technique, the results of scientific discoveries, and buying and selling on a larger scale. Some of the labor can be shifted from farm to farm; likewise some of the large-scale equipment such as threshing and silo-filling machines. But some of the advantages of large-scale operation are not so available. For example, it is not probable that the use of power will be carried so far as upon a large factory-like farm.

LARGER FAMILY FARMS

The other development which should result from the new conditions described earlier is that the family-sized farms should become larger. Although not so spectacular a development, it would be far more important in the aggregate than either of the two above described. Most of the farming of the United States will continue to be carried on on family farms as in the past. We can therefore afford to give most attention to such farms in any program of agricultural betterment. Such farms should become larger in two ways: first, by including more acres of land and keeping more livestock; second, by increasing the output per acre and per head of livestock. The first development ought to be the more important one for the present. The latter will develop when the food-consuming population of the earth increases sufficiently to warrant it.

This development is described as one which should take place rather than one which is taking place. The factual basis as whether or not it is taking place now is not very adequate. There is no doubt about the increase in volume of output, but the movement toward more acres is still localized. How soon it will become general is a matter of forecast. The development to be expected in the near future will be mostly in the nature of substituting machinery and power for labor and farming the poorer grades of land more extensively. The increasing output per acre will take the form of an intensive use of the better grades of land. Both extensification and intensification, therefore, will figure in the coming developments. On the poorer grades of land, grazing and hay will take the place of crops, and small grain crops the place of corn and other labor-consuming products. Considerable of the poorest land will revert from pasture to brushland and woodlot. Such developments will be especially conspicuous in the regions where soil has been depleted or the soil is light or the boll weevil has rendered cotton farming unprofitable or in the semiarid regions where pastures have been converted to crop land unwisely. On the other hand, some land not now in use which lends itself to the use of machinery and extensive farming will come into crop use. One can expect still more semiarid land to come into use for wheat in the United States and in certain foreign countries as a result of the new economies made possible by the tractor combine; also similar developments in the growing of cotton on the western frontier of our own Cotton Belt and on the level stretches of land in the older part of it.

The intensification of the culture which takes place on the better grades of land will probably take some new forms. It will not involve the use of more hand labor, but instead the use of more capital. With the introduction of power and large-scale machinery, it becomes comparatively easy to prepare a seedbed more carefully than formerly, and to cultivate corn more frequently than formerly. Very little additional labor is required to apply more fertilizer, and the additional product resulting can largely be handled by machinery. Even the heavier rate of feeding of livestock can be mechanized. The harvesting operations under the new conditions with the use of machinery will be more wasteful in the physical sense. More small grain will be wasted both in cutting and in threshing. More hay will be left on the ground. But these losses will be more than overcome by other ways of caring for the crop which can be provided by machinery.

INCREASING EFFICIENCY

As to the contribution of Professors Mead and Ostrolenk to the solution of the agricultural problem, it may be said that although few persons familiar with the data of agriculture would use them as innocently as they, the general conclusion which they derive from them, that the agricultural revolution which has been underway for 75 years or more has taken a fresh spurt in the last 10 or 15 years, is commonly accepted. Evidence concerning it was presented in Chap. I of this book. Important gains in efficiency of agricultural production have no doubt been made in this country since 1910. Important further gains can and will be made, and these will contribute gradually to agricultural betterment. Naturally, farm people clamoring for "social justice" do not like to be told that the way to escape from their condition is to look after their own affairs better. One farmer's comment on the subject was that "All Professor Mead tells us is to go back and slop our hogs —only do it more efficiently." The agricultural economist's comment on Professor Mead's book is that it represents more nearly the point of view of the city man with respect to agriculture than anything else which has been published.

It is important to point out that agricultural efficiency means more output from the same input, and hence more total output, unless the input can be reduced; and this latter is rather difficult in a period when many farm people in difficult straits try to make ends meet by increasing their production; and machinery and power are replacing labor at a rate that calls for a more rapid migration to the cities than can reasonably be expected. The larger production resulting keeps prices from rising as fast as they need to, and, hence, keeps net farm incomes from rising, as has been the case since 1924. Under the circumstances, city consumers benefit from the increase in efficiency in place of the producers. Not until the larger product will sell at a price which leaves somewhere near the same profit per unit of product and, hence, a larger total net income, will agricultural producers themselves really benefit from the increase in efficiency which brought it about.

All agree that in the long run agriculture will benefit from increases in efficiency in its own processes; but over short periods and under particular conditions, it may benefit little if any. In the whole period from 1910 to the present, agriculture has benefited considerably from important gains in efficiency. The resulting increase in volume of production per farm has been an important factor in the increase in net farm income which has occurred, and in the somewhat larger purchasing power. The same thing may have been true from 1921; but it is more likely that a smaller output per unit of input would have left larger net farm incomes than now prevail by causing prices to be more than enough higher to offset the lessened output. We can be quite sure that this would have been true since 1924. The immediate need is for changes that will lessen input with the same or slowly rising efficiency, and with no increase in the total product. Working intensively the better acres does not contravene such a purpose, if the remaining acres are farmed enough more extensively to reduce the average rate of input of the whole.

DIVERSIFICATION

Diversification is commonly proposed as a remedy. The comment on this made by the deans of the agricultural colleges and presented in Chap. III covers this proposal very well. There are as many situations calling for more specialization as for more diversification. Let us take truck farming as an example. The old-fashioned type of truck farm—in fact the still prevailing type in almost every area—produces a little dab of a very large number of small fruits and vegetables and takes them to the market each morning. Much of the product of such farms is of poor quality, because one cannot expect the operator of a small farm to be highly skilled in the technique of production and preparation for the market of a large assortment of fruits and vegetables, or to have land which is well suited to all of them. The new type of truck farm is one in which two or three truck crops are grown in large volume by a man who understands thoroughly how to grow them and sort them and pack them, who makes his attack on the market only when these are in prime condition. He grows them on land which is especially well suited for them. They do not keep him as busy the year round, but they are so planted that the work on the different crops dovetails to a reasonable extent. Frequently, a certain amount of general farming is combined with the truck crops. Some livestock is kept to use up the waste products and produce some manure. A little feed and forage are grown to provide for the work stock, and to give the land a chance to rest between truck crops. Chester County, Pennsylvania, furnishes a good example of the latter type of farm economy.

The situation in the Cotton states is an interesting one from this standpoint. Diversification has been strongly urged for many years, but is not making much headway. The cotton crop utilizes the time of the farmers so completely during the growing and harvesting season that there is little time for anything else. The boll weevil has already caused important changes in the farming, and is likely to make still more important ones in the future; but in general the changes have not been toward systems of farming in which cotton is grown in combination with other crops, but instead toward the complete substitution of vegetables and fruit and other crops, as in the coastal plain regions, or the complete abandonment of the land. In tracts of lowland with good pasture, dairying and beef cattle have established themselves successfully as a substitute for cotton. On the western edge of the cotton belt, a very highly specialized type of cotton farming has been developed in which the use of machinery is playing an important part.

No doubt there has been less actual diversification on regular cotton farms than would be desirable. If forage to feed the workstock and a certain amount of productive livestock could be substituted for a one-third or a one-fourth of the cotton on many of the farms, some time would be released to take care of these crops even during the peak-load season; and there is fairly good evidence that such a change would be profitable, even though the crops that might be substituted for cotton do not flourish well on most of the land which is now devoted to cotton. It does not take place to the extent that it should, partly because the thinking of the cotton grower, as a result of long habit, is focused too much on the size of the cash receipts from his cotton crop; likewise the thinking of the landlord. The leasing systems in use are not of the sort that encourage the change suggested.

In the rice area, the need is not for a high degree of diversification, but for a continuance of specialization in rice with forage crops substituted for idle land in the years when it is supposed to need a rest from rice growing; and probably for a certain amount of livestock to utilize the forage.

In the range country, specialization in some one form of livestock should continue as at present, but there is much to indicate that except where the rainfall is too scanty, a combination of a considerable amount of cropping with the grazing, and the breaking of the ranges into sizable farm units, would be advantageous.

Dairy farming has become more and more specialized in the strictly dairy farming regions. A larger and larger percentage of the incomes is coming from the dairy herds.

In fact this latter can be taken as the general trend of developments in the so-called diversified-farming regions. This was clearly brought out by a study made by the University of Minnesota a few years ago. Out of the group of 500 farms, 50 were selected that had been operated most successfully. It became apparent at once to the investigators that these farms were, for the most part, rather highly specialized; and an analysis of the data showed that one group of them were potato or truck farms obtaining 75 per cent of their income from one or the other of these sources and 22 per cent of it from their dairy herds; that another group consisted of beef cattle and hog farms which obtained 68 per cent of their income from those sources and 13 per cent from dairy products; that another group of farms were essentially dairy farms obtaining 53 per cent of their income from the dairy herd and 31 per cent from other livestock, mostly hogs. These latter farms may be described as specializing in a combination of dairying and swine raising, a good deal of the corn being put into silos and fed to the dairy herd, but some of it being husked and fed to hogs, which also consume the skim milk from the dairy herd. The most diversified farms in the region were in the grain-farming section, where about one-third of the income was from grain, and the rest was about equally divided between dairying and other forms of livestock.

The foregoing examples indicate very well the general direction which agricultural specialization is taking in the United States. Areas which have been highly specialized in one form of livestock, as our ranching areas have been, or in the production of a single cash crop, have become more diversified and have added either crops or livestock as the case may be, producing systems of farming such as exist on the so-called grain farms in Minnesota. Areas which have been highly diversified, with income from several crops and several classes of livestock, have tended to become more specialized and to obtain an increasing proportion of their income from one or two products. In other words, the tendency is toward a middle ground, toward specializing in a few products on each farm, these being selected in such a way that they supplement and complement each other to the best advantage.

Summary.—To summarize the foregoing, it is clear that the progress of adjustment of agricultural production will largely be in terms of family-sized farms. In general, such farms will become larger in acreage and in amount of livestock kept. If the land on these farms is of varying grades and types, considerable of it will be extensively used. If some of it is rough and relatively infertile, it will tend to revert to timber, and eventually a sizable woodlot will be one of the enterprises on a great many farms. The better grades of land will tend to be farmed more intensively, making use of machinery rather than hand labor to attain this. Costs will, in general, be reduced by the use of machinery and other labor-saving devices. Costs will also be lowered by heavier feeding and using more fertilizer. More thorough cultivation will have the same effect if it can be accomplished without using more labor. Machines will be used even when they result in the wasting of considerable of the product. Weeds will be controlled better only where it can be done with machinery. Some of these developments will virtually amount to larger inputs, and will give larger outputs, unless offset by more extensive cultivation of the poorer acres and the keeping of fewer of the less-productive livestock units. Any innovation which results in an increased output from the same farm must be considered very carefully upon the standpoint of its effect on the price of the product. There will be more diversification in some cases and more specialization in others.

PUBLIC AID

The program of public service to assist in these adjustments must be very carefully considered. In particular, any procedure for the reduction of costs must be analyzed carefully from the standpoint of its effect on output. Most important of all, attention must be focused upon the ways and means of enabling farmers to obtain more acres to manage, and to farm the poorer grades of land extensively. This aid to adjustment must be made available to individual farmers in various ways; but, necessarily, it must be planned mostly with a view to assisting at one time whole groups of farmers in somewhat similar conditions.

To this end, the farming in the United States should be mapped out rather carefully, first, in large regional units; and second, in many smaller subdivisions within these larger units. For these smaller units, more data must be collected and analyzed as to climate and rainfall, frost hazards, soils, and other physical conditions. As soon as possible, machinery needs to be set up for collecting detailed records of yields of different crops in each area. Analysis needs to be made as to the relation between rainfall, temperature during the growing season, amounts of fertilizer, numbers of cultivations, time of planting, and the yield to be expected. Similar data need to be worked up for different kinds of livestock. The price structure for each farm product needs to be worked out carefully for the whole United States. Studies must be made that will indicate the trends of prices and the factors influencing deviations from such trends. All this information must be brought together and synthesized in such a way as to show for each system of farming what combinations of enterprises, amounts of cultivation, rates of feeding and fertilizing are likely to prove most profitable. The results of such syntheses, together with a careful statement of the methods used in making them, must be made generally available to the farmers of the United States. The outlook reports must be more thoroughgoing and more detailed, and must be more widely disseminated. Indexes showing trends of incomes in the various areas must be worked out, so that it will be evident to the public agencies concerned with agriculture whenever any area is falling behind, so that special efforts can be made to discover the causes thereof and develop a special program to offset them.

At present, such a campaign of study and extension is necessary to work out the best program for the abandoned acres in the old Cotton Belt. No doubt a certain amount of actual experimentation and testing out of the conclusions of analysis, such as upon the Fairway Farms in Montana, is highly to be desired. But such experiments should be upon a small scale at first. The problem has not been studied sufficiently as yet to determine even the way in which the experimental farms should be set up. Professor Pope, of the Alabama Polytechnic Institute, considers that cotton must continue to be the basis of agriculture in most of the South, that dairying and other livestock farming will prosper only in regions where grass and forage grow unusually well for the South, that fruit and vegetable farming must necessarily be restricted because the consuming power of the population for such products is easily exhausted, that larger farms and more use of labor-saving machinery on land that is level enough to permit it, is the principal hope for profitable cotton farming in the old Cotton Belt, and that the rougher land must go back to timber. He also thinks that a freer use of fertilizer and higher yields on the better acres will aid very greatly. This latter development is held back by reason of the fact that the farmers themselves and particularly the landlords do not care to take the larger risks involved in the application of more fertilizer. But Professor Pope's ideas on this subject would not be accepted by all students of Southern problems, and he would be most insistent of all that they be tested out on a rather small scale before they be generally adopted.

Other areas than the South also present problems. In the semiarid regions, the use of more power machinery has apparently made crop-growing profitable on much land that would not have supported it under prewar conditions. But, no doubt, considerable natural prairie sod has been broken that never should have been, and a production program suited to this situation is much needed. In other sections of the West the problem needing attention is preventing overgrazing and overcoming the ill effects of it.

For the first time in our history, the Corn Belt has become a cause for anxiety. This has happened because corn and hogs, which are the basis of the economy of this region, have lost in relative purchasing power since 1921. From 1900 to 1919 the prices of these products rose more than those of any other major group of farm products; in fact nearly twice as much as the price of wheat and rye. In consequence, production expanded continuously until it reached a high level in 1919 and 1920. For various reasons, among them expanded production in Europe, prices of corn and hogs have been relatively low since the depression.

In the North Atlantic states, the problem to be handled is an old one, and is perhaps less acute now than formerly. In the main, it consists of developing a system of farming that can handle large tracts of rough land extensively. It may involve a combination of livestock and woodlot farming with a small amount of small grain and forage. Unless such a system can be developed, the agriculture of this region will increasingly confine itself to vegetables and fruit for the large urban centers nearby, and even these will seek out only the best lands —as at present the truck growing for the Boston market is tending to migrate to the Connecticut River Valley.

Land tenure is closely related to production. Ownership of land is clearly preferable to tendency, other things being the same. This is so obvious that we need not take space to discuss it. But if ownership carries with it small farms, and the restricting of the effectiveness of high-grade management, then ownership is not to be preferred. There is much ownership in the United States in regions of poor land or with small holdings that is much worse than the tenancy of other regions. A system under which a considerable fraction of the land is operated by tenants under proper leases, while the operator is learning how to be a manager and an entrepreneur and accumulating livestock and equipment and operating capital, has much to recommend it. The principal objection to tenancy is that too many of the leasing arrangements are bad, especially in the South and in grain-farming regions generally. They are designed for a system of cash-crop exploitive farming with a landlord who cares to give no more attention to his farms than is needed to assure him that he will get his returns from the crop that is produced. In many cases, the landlords need reforming even more than do the leasing systems. Where leasing arrangements have been developed under which the landlord advances much of the operating capital, furnishes more or less of the livestock, and looks after his property properly, tenancy is contributing more to a prosperous agriculture than the small owner-operated holdings in other sections. There is also need that credit arrangements be provided that will enable tenants to become owners before they have accumulated a large amount of capital.

The interests of the nation must be considered in any program of production adjustments. In the chapter on Tariff Revision, it was proposed that a system of rate making be introduced under which Congress would determine the national production policy for each farm product in the tariff schedule. Congress, in effect, does this very thing now whenever it agrees upon a tariff rate. But seldom is the analysis given to the question sufficiently in terms of national production policy. The tariff rates on beef and wool illustrate the point very well. The conservation of our soil resources, or the maintenance of some form of agriculture in the range territory, may warrant subsidizing these lines of production. In subsidizing the sugar-beet industry in the United States, due weight must be given to the fact that only by importing cheap foreign labor can this industry exist. Do we want to introduce these elements into our population? We must also give weight to the fact that while any general protectionist policy for agriculture points in the direction of more land in farms, it also points toward more intensive farms, smaller farms, and lower real incomes of farmers, that is, toward the so-called ''peasant'' farming of Germany and France; whereas the policy of producing only those products which can stand on their feet in competition with the rest of the world, while it means less agriculture and less land in farms, also means larger farms and incomes, as does the agriculture of England and Denmark.

CHAPTER XVII

LAND UTILIZATION

The principal need of the people of the United States in the utilization of their land is that they become conscious of the problems involved and give forethought to them. Our policy in the past, if we have had one, has assumed that the object is to get our land into agriculture as rapidly as possible. We have hastened to get our timber cut and our land cleared. It has been an accepted principle of land utilization that "farms follow stumps." It has similarly been assumed that prairies must come under the plough. Seldom has it occurred to the rank and file of our people that some of our timberland is better suited to such uses than to crops, or that the nation might well prefer to have considerable of its land permanently in forests and ranges. Yet long before all the timber was cut, some of the farm land in the sections first cleared had reverted to timber again. And the clearing seldom followed closely enough on the heels of the logging to prevent much second growth from reaching merchantable size before the farmers arrived.

The land-utilization problem, as it confronts us today, is a principal phase of our great national problem of conservation of our natural resources. Perhaps the possible depletion of our supplies of oil and coal and iron have received more attention in popular writing; but they are much less important to the future of the nation than the proper utilization of our soil resources. Here we are with a national asset of 1,903,000,000 acres of land of varying sorts and conditions and varying degrees of productivity in different uses. The problem is so to use these resources that present and later generations of us not too remote from the present will get the maximum use from them. If we employ them wastefully now for the sake of present profits, future generations will be denied much that we now enjoy. If this generation uses them too sparingly, those to come will never get as much out of them as we might have done. We shall have behaved like the long-distance runner who loses a race because he runs so slowly at the start that he is unable to catch up at the end. We must expect the future to take care of itself to a very considerable extent, to make scientific discoveries that will take the place of some of the resources which we are now consuming.

There are extreme conservationists who are disposed to oversave, who think so hard about the billions of years ahead of us and the finiteness of present supplies that they weep to see any natural resources approaching even remotely a distant end; but this point of view is not characteristic of the American people. Rather, the opposite one of thinking only of immediate profits. The nation need not go to the extreme of the rabid conservationists, but it must look much farther into the future than the entrepreneur who is thinking only of the prosperity of his business in his own lifetime. Between the nation and the individual, therefore, is bound to be some conflict of interests of the same general sort as there is between a 1-year tenant and a landlord.

At this point a clearer understanding of the true meaning of economy and waste needs to be brought into the discussion. The overzealous conservationist is disposed to look upon any failure to use any part of a product or any portion of our land domain as an economic waste. He wants to see all of the cultivable land in a cotton farm in some kind of a crop because otherwise it may grow weeds. But suppose that the same amount of capital and labor expended on half as many acres will yield a larger net return to the farm operator. Then, clearly, it will be wasting some of these resources to spread them over the larger acreage. Coal left behind in pillars to support the overhanging rock is looked upon by such people as wasted; but any system of mining which required using artificial supports or filling the stopes with waste rock in order to remove the coal pillars, would probably cost more than the coal is worth, and hence would be a wasteful method of mining in the true economic sense. The arch-conservationists would have substituted many methods of farming that are truly wasteful for those which they have described as exploitive of our natural soil resources.

But economy in such matters frequently depends upon whether the point of view is private or social. At present prices, it may not pay the coal operator to remove the coal pillars; but a few generations hence no one would consider for a moment a system of mining which failed to remove so large a percentage of the coal. In fact, the price of coal may be so high then that what was left in the pillars might be removed and profitably held in stock for a later generation, especially if the rates of discount used were as low as those at which governments are accustomed to borrow money. Even though many practices are not good private business, even figuring on the basis of low interest rates, they may be good national economy. A nation has to look much farther into the future than private individuals.

POPULATION ASPECTS

Land utilization also has an important relation to the population of a country. The future needs for land depend upon the rate of increase in the population. This rate has fallen off rapidly in the United States of late. It was 31.8 per cent between 1820 and 1830 and only 10.9 per cent between 1910 and 1920. If the rate keeps on lessening, a point will be reached farther along at which the population is nearly stationary, as it has been in France since 1870. The birth rate in the United States at present is 23.4 per thousand and the death rate 12.4 per thousand, leaving a net increase of 11.0 per thousand. But these rates need to be adjusted for the fact that the birth rate is declining. In a country with a falling birth rate, a larger proportion of the people are young and of child-bearing age than in a country with a stationary birth rate of the same amount, and hence birth rates are higher and death rates are lower. The adjusted figures would be around 20.3 for the birth rate, and 15.3 for the death rate and 5.5 for the difference. This does not leave much room for further decline in the birth rate. According to P. K. Whelpton of the Scripps Foundation for the study of population questions, the urban white population of the United States has already attained a birth rate which, if stationary, would result in an actual population decrease of 6 per 1,000 each year. Our cities will largely depend upon our own rural districts for their population increase in a future not far distant if the immigration bars are not lifted. Mr. Whelpton puts 200,000,000 as the upper limit of the population of the United States, and considers 180,000,000 as the probable figure. The Bureau of the Census and Dr. Raymond Pearl of the Johns Hopkins University have made estimates that, while not identical, indicate roughly a population of 150,000,000 by 1950, 180,000,000 by 2000, and 225,000,000 as a maximum sometime the next century. The population of the United States is now around 120,000,000.

These estimates seem reasonable. There can be little doubt that the rate of increase in our population will continue to decline. But we must remember that in the time of Malthus similar forecasts were made, and the direst misery was predicted as a result of population pressure on the food supply. Then the Industrial Revolution came along, and in the next 100 years the population of Europe increased two and one-quarter times and the plane of living of the population improved nearly as much. Ordinary improvements in the arts will not upset the predictions of Pearl and Whelpton. The increased product resulting from them will be absorbed by a rising plane of living. But if some important new sources of food or power are thrust upon the world, all calculations will be upset and the population of the earth will make a fresh start.

So far as the utilization of the land of the United States is concerned the important question which we need to answer is what utilization of the land in the United States will be required by the increase in our population from the present 120,000,000 to the 180,000,000 to 225,000,000 that are forecasted by the various agencies mentioned. Dr. George M. Peterson, who has recently completed an analysis of the land-utilization problem of the United States for the Federated Societies, has estimated that this increase in population can all be taken care of without any diminishing of the per-capita returns, on our present acreage of land in farms. Following are the details of his estimate:

The substitution of mechanical for horsepower that is likely to take place will release farm products sufficient to take care of 20,000,000 people. It is estimated that 90,000,000 acres of our present land in farms is used for growing feed for horses and mules, which at our present ratio of land in crops to the population, is equivalent to approximately 40,000,000 people. Dr. O. E. Baker has estimated that the decrease in the number of horses and mules in the United States between 1920 and 1925 alone increased the human food supply of the United States by 3.3 per cent.

The probable increases in our imports of farm products and decreases in exports will provide for 13,000,000 more people in the United States. It may be argued that importing food for our population is not taking care of it with our own resources; but these imports are of products which we do not grow; such as coffee, tea, rubber, bananas, and spices.

Increasing efficiency in the utilization of feed by livestock and substitution of types of livestock which are more efficient users of feed, will take care of 12,000,000 additional population. Dr. Baker estimates that there was a 9 per cent increase of this sort between 1920 and 1925.

Increases in yields of crops per acre and substituting more productive for less productive crops, for example, corn for small grain, will take care of 42,000,000 additional population.

Finally, changes in consumption in the form of substitution of dairy products for meat, and of cereals for both, and an increasing use of fruits and vegetables, and certain reductions in wastes as a result of better marketing and more commercial canning, will easily provide for 10,000,000 additional population.

The total of all the foregoing increases is 97,000,000.

If these changes all had to take place within the next 10 years, one would surely call the estimates preposterous. But remember that the population forecasters are allowing us from 100 to 150 years to attain another 100,000,000 of population. A rate of change along the foregoing lines very much slower than that which has occurred in the last 10 years will take care of the population increase amply. Our food supply is now keeping up with the population and maintaining about a steady volume of exports. Those who have studied our foreign trade in agricultural products all agree that it is not the lack of productive power that is now curtailing our exports of such products; but the increasing agricultural self-sufficiency of the importing countries. It is highly improbable that our production of food and textiles will fail to keep up with the population increase. Imports will probably gain faster than exports, but that will be because each new person born in the United States represents a potential increase in consumption of tropical agricultural products. We must focus our attention, as is done in Chap. IV, on the import-export balance of competitive agricultural products.

Agricultural economists are also generally agreed that such changes as outlined by Dr. Peterson can take place without any decrease in the returns to the labor and capital engaged in producing them. Even at the present time, the returns would be greater if the productive effort were confined to a smaller number of the better acres and animal units. Improvements in the agricultural arts and increases in the use of commercial fertilizers that will be highly economical will provide the additional food and textiles as fast as the population grows. Even a country with agriculture as intensive as that of Germany demonstrated in the last 50 years that production per acre could be almost doubled without raising the costs.

The foregoing estimates provide for some changes in the dietary of the American people; but the new dietary will be as healthful and wholesome and even more varied than the old one.

Although all of the foregoing can take place on the land now in farms and in crops, it is not likely to happen in this way. There is considerable land in the United States not now in farms which is more suited to agriculture than some of that which is, and we can expect a slow movement of land in and out of agricultural use. Dr. R. P. Teele, the foremost student of land reclamation in the United States before his death a few years ago, estimated that in 1920 there were more than 40,000,000 acres of land for which reclamation works had been built or were being built, that had not been put into cultivation.[1] Most of this will eventually come into crop use. It is commonly stated that there are 70,000,000 acres of irrigable and drainable land in the United States that can be converted into crop land when the need for it arrives. But the new land which is most likely to be taken into agricultural use in the immediate future is not these tracts involving large reclamation expenses, but those which lend themselves to operation on a relatively large scale with livestock and power machinery as the principal factors in the scheme of operation.

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[1] *Jour. Land and Public Utilities,* November, 1927.

While this new land is coming into agricultural use, other land will be going out of such use in the older farming regions. For a time, the two movements may approximately offset each other. But presently the taking of new land into farms will become the more important and there will be an increase in crop acreage, with the result that the additional 100,000,000 of population will derive its foods and textiles from somewhat more than the present acreage of land in agricultural use.

It should be apparent from the foregoing that there will never at any time be any strong pressure forcing land into farms. The changes will come about slowly. Any promoters of land-selling schemes who attempt to stampede prospective buyers by telling them that the land surface of the earth is limited and that it will never be possible to produce any more, should be prosecuted for fraudulent misrepresentation. As for the next 25 years, we shall probably want no additional land in farms. The problem will be to utilize what now is in farms to the best advantage. Our present efforts must be directed toward inducing our farmers to cultivate more of their poorer acres extensively, and to use intensive methods on the more limited acreage of their better lands. The increases in efficiency which have taken place in the last 10 years, if spread to more farmers and over more acres, will amply care for the needs of the growing population. Meanwhile, if 50,000,000 acres or more of our poorer farm lands can be converted to timber use, and the 40,000,000 already reclaimed or in the process of being reclaimed, can be brought into agricultural use, we shall have made a further readjustment of a very worthwhile nature.

It is apparent from the foregoing that the chief land-utilization problem of the present generation is not providing more land for crop use, but finding other use for land which ought to go out of crop use in many areas, and taking care of the present population of such areas. We have a considerable area of farm land which is now overpopulated. The largest tracts of this are in the Appalachian Highlands stretching all the way from Canada to the Mississippi. In the northern portions of this highland the population has already moved out, in large part. It is moving out rapidly in that section of it included in Pennsylvania, Maryland, and West Virginia. The congestion is the worst in the southern Appalachians. The development of manufacturing was the most potent factor in bringing about this change in the northern section of this highland. The same force is now operating increasingly at the southern end of it. There are sections where the young people are literally streaming out of the hills and valleys to the nearest new factory towns. In a section recently studied in West Virginia, two-thirds of the income of those still living on the land was obtained from work in nearby factories. Still farther south, the boll weevil has created an equally urgent situation over a stretch of territory reaching from South Carolina to Mississippi.

LAND PLANNING

It was stated at the beginning of this chapter that the need of the hour in land utilization was consciousness of the problem and planning of programs. Such programs have both national and sectional aspects. From the standpoint of national planning, the need is primarily for sufficiently accurate and detailed facts as to the physical characteristics of the land and as to its present utilization, and a certain amount of mapping of the land surface of the United States according to its most advantageous potential uses. Much of the planning on a broad national scale has already been done. In 1921, Secretary Wallace appointed a Committee on Land Utilization, with Dr. L. C. Gray of the Division of Land Economics as chairman, and a large membership from the various divisions of the Department of Agriculture. This committee assembled a large amount of useful data relating to the problem and made a series of estimates as to probable future uses of our land. But the data upon which these estimates were made were inadequate to a high degree. The estimates could be published only in the form of totals for the United States. Few maps could be prepared indicating in broad outlines by areas the present and potential land uses. Funds should be provided for such an undertaking in the near future. The name ordinarily given to such an undertaking is ''the economic classification of land.'' Such classification should be made first of all for those sections in which soil surveys have been completed.

It should be clear from the above that a classification that would indicate the potential uses of the land in detail within every county would be a great waste of public funds at this time. Long before the results of such a study would be called into use, the classifications would be out of date. Land utilization is not fixed and immutable according to soil types and climate. What is the best use of a tract of land in 1975 may be much different from its best use in 1930. What is needed is a classification on broad general lines which will give us a reasonably accurate inventory of the potential agricultural and forest resources of the nation, mapped out in broad outlines, and localized according to the commonly recognized geographical units. A considerable amount of intensive study of sample areas will be needed as a basis for this general inventory.

Having this general inventory and outline as a basis, public agencies can single out specific tracts where significant changes in land utilization are underway or impending, and survey these in detail. To illustrate, it would undoubtedly be a waste of funds to undertake at this time a careful mapping by towns and counties of the resources of New England and to work out an economic classification on the basis of it. It is seriously to be questioned whether the project somewhat of this nature now underway in Michigan is not ill timed and ill advised. The only expenditure which can be justified for the present will be for the making of an inventory and classification along general lines. This ought properly to include a careful study of selected townships that would furnish the basis for a judgment as to the condition of the rest. The next step in a land planning program for New England would be selecting certain areas where developments have reached a critical stage and studying these with sufficient care so as to assist those living in the area with their readjustments. In an area as large as New England, perhaps several such studies ought to be going on at one time.

In order to keep aware of developments in sufficient detail so as to know where to undertake special planning studies, some kind of a service for collecting current data is needed. It should assemble information as to movements of population in and out of the area, purchases and sales of land and the accompanying prices, and all the data necessary to calculate indexes of receipts and expenditures and net income.

There are many areas in the United States where detailed planning studies ought to be made in the near future, or should have been made in the recent past. No appreciable movement of settlers into any timbered or dry-farming area should be allowed until a careful survey has been made of the agricultural possibilities of it. Certainly no public funds should be spent for reclaiming an area until someone besides engineers have analyzed its agricultural problems.

Once such studies have been made, the problem arises as to the method of reaching prospective settlers with such information. The immigration departments maintained by many states ought to be of a great deal of assistance along these lines. Some of them are. Most to be commended in this respect is the Immigration Department of the State of Wisconsin. In too many cases the program of such agencies has been getting as many settlers as possible into the state regardless of the after effects. P. S. Lovejoy, in an article in the *Country Gentleman* some years ago spoke of some of the states as maintaining an official "sucker list," that is, a list of prospective purchasers of land for the use of the land companies, so that they could turn loose their salesmen upon them.

None of the efforts at regulation of land companies has been particularly successful. A proposal which has sometimes been made is that public agencies, either federal or state, maintain a list of "cooperating land companies" made up of companies whose offerings of land and selling methods have been examined by the public agency and found to be commendable. The proposal has been objected to because it involves assuming too great a responsibility on the part of the public agency.

AGRICULTURAL USES

That there never need be a shortage of land for agriculture in the United States is made clear by a hasty examination of the data. In 1919, there were 956,000,000 acres of land in farms in the United States, almost exactly one-half of the total area of the country. Approximately 410,000,000 acres, or a little less than half, of the land in farms was called "crop land" at that time, but only 365,000,000 acres of the crops were harvested, the remaining being in fallow or having a crop too poor to harvest. A total of 818,000,000 acres were used for pasture alone, and another 237,000,000 acres were woodland pasture. Part of this pasture was in farms and part not. There were only 248,000,000 acres of unpastured forests. The remainder of the 1,903,000,000 acres was either not in use or in farmsteads, roads, cities, villages, and parks. Between 1919 and 1925, the acreage in farms decreased 31,000,000 acres and the acreage in harvested crops 13,000,000 acres.

The Committee on Land Utilization appointed by Secretary Wallace computed that the largest amount of land that could ever be used for crops without terracing steep hillsides or fertilizing pure sand was 973,000,000 acres. About one-half of this was crop land already in 1919. It designated 468,000,000 acres as arid grazing land unsuited for any purpose, and 262,000,000 acres as fit only for forestry with a certain amount of incidental grazing. Another 66,000,000 acres was left in an uncertain class as being fit for either forest or pasture and 67,000,000 acres as waste land unfit for any use except possibly parks, consisting of absolute desert or rock. Another 67,000,000 acres was set aside for cities, roads, railroads, and farmsteads.

If the land of the United States were used as just outlined, the country would have less forests and less grazing land than is normal for a nation, and particularly less of these than is needed for a people with our standard of timber and meat consumption. One can expect that the major portion of the difference between the approximately 400,000,000 acres of land now in crops and the 973,000,000 acres capable of being thus used, will be for the most part utilized as forest and grazing land. Clearly, there is ample land for any agricultural expansion which can ever be prompted by the population of the United States.

FOREST USES

The original forested area of the United States has been estimated at 822,000,000 acres, of which about 352,000,000 acres has been permanently cleared and transferred to other uses, so that only 470,000,000 acres are now classed as forest land. Of this, 130,000,000 acres is virgin timber and the rest is second growth that has been allowed to develop without much care or protection. Half of this now contains some timber of saw-log size. It is estimated that 81,000,000 acres of this land has been burned over so frequently that it is not now restocking with trees. The United States Bureau of Forestry estimates our annual use or destruction of timber at 25,000,000,000 cubic feet, and the annual growth on the 470,000,000 acres as 6,000,000,000 cubic feet. We are thus using up our timber resources at a rapid rate.

There are a number of ways in which the foregoing situation will be met. First, we will consume much less timber. The annual per-capita consumption of forest products in the United States is estimated at 228 cubic feet. In Europe as a whole, it is only 35.8 cubic feet, and in England only 15 cubic feet. This large timber consumption is a part of our standard of living, but it could be reduced very considerably without our feeling the effects of it. In the second place, we are increasingly substituting other materials for timber in buildings, furniture and a score of other uses. Methods are now being developed for using corn stalks in place of wood for paper and insulating material in buildings. Our present annual growth of timber would permit a per-capita consumption for the present population of the United States of approximately twice that of Europe. In the third place, with only crude forestry, consisting mainly of fire protection and the leaving of only seed trees, the annual growth on our present acreage of timber could be increased from 7,000,000,000 to 14,000,000,000 cubic feet per year, which would permit an annual per-capita consumption of over four times that of Europe. It is estimated that intensive forestry practices could increase the annual growth of our present timber lands to nearly 27,000,000,000 cubic feet, or more than our present consumption. But such forestry will never be practiced to any great extent in the United States. Although forestry does not require a great deal of labor, it requires enough so that intensive forestry at prevailing wage rates in this country is not likely to prove profitable. Private capital thus far has had too many highly profitable alternative uses to stimulate its use in intensive forestry enterprises. It is reasonable to expect, however, that an increasing amount of forestry of the crude type above described, and considerably more intensive in certain respects, will come to be developed.

Lastly, we can expect to have considerably more than 470,-

000,000 acres of land in forests. The available data indicate that 9,000,000 acres reverted to forests of their own accord between 1920 and 1925. This is a process which has been going on in an important way in the northern Appalachians for over 50 years, and it can be expected to continue and spread to other regions. It has been happening in a conspicuous way in the sandy areas of Michigan since 1910.

This process can be hastened by a taxation system which is suited to the nature of forestry as a form of production, which makes its collections to a much larger extent at a time when the crop is harvested. This subject will be discussed in the chapter on Taxation. Given a suitable system of taxation, one can expect an increasing amount of capital to find its way into investments in forestry enterprises. Paper mills, mining companies, railroads, furniture factories, sawmills and other woodworking or woodusing enterprises can be expected to develop tracts of timber. Well-to-do people can be expected to build up estates of timber land, partly for the sake of a certain prestige which is always attached to land ownership, and partly because of the recreation obtainable on such an estate. More important than all else, one can expect farms in areas of mixed land, of which there is an abundance in the United States, to take on considerable tracts of woodlot as one of their enterprises, partly because of the increase in volume of business which will result, but also because of the winter work which is provided by it.

But public ownership will always play a large rôle in forestry. The national forests of the United States outside of Alaska contain a total of 140,000,000 acres. The states have 10,000,000 acres of forest land. The cities and towns of Massachusetts own or control 60,000 acres of forest land. A carefully guarded policy of purchasing wornout farm lands in areas where agriculture is dying out at present, and thus assisting the owners to move out, has much to recommend it. No way could be devised for spending $25,000,000 of money a year that would relieve agriculture more and save more individual suffering than to spend it upon the purchase of such land. The difficulty is one of managing such an undertaking with discretion and without paying more for such land than it is worth. The author believes that the United States Forest Service, assisted by the right kind of an advisory board and the services of specialists who devote themselves to the problem of the valuation of forest land, can be trusted to handle this kind of a problem safely. All such purchasing should of course be preceded by a land classification survey of the area involved.

The greatest need of forestry at the present time is for research in the economic aspects of it, and the collection of the necessary data for such research. Altogether too much of the literature on this subject is based on data of a very questionable nature and conceivably highly biased. No data are available which would make it possible for an interested investor to forecast the probable annual outlays and receipts from forestry enterprises. Such data are needed for all the different types of trees on many types of land in many sections of the United States. Very little is available that would enable one to determine the most economical methods and practices under conditions such as exist in the United States. Some funds have already been made available for such research, but it should be pushed much more vigorously than is at present contemplated.

RECREATION USES

It is also clear that there is an abundance of land available for recreation uses in the United States, and much land has already gone into such uses. There are 528 state parks in the United States, with a total area of 2,265,000 acres; but all but 500,000 acres of this is in 89 parks in New York State which would be classified as forests rather than parks if the cutting of trees was not prohibited. The 19 national parks have an acreage of 7,500,000 acres and 64 smaller parks set aside as national memorials or military reservations contain 2,900,000 acres. In addition, a number of cities have parks outside the city limits. There is Denver with its 21 such parks; Cook County, Illinois, with its 30,000 acres of ''forest preserves''; and Boston with its suburban tracts controlled by the Metropolitan Park Commission. One needs only to mention the rapidly increasing amount of land which has been converted to golf links, both public and private, in recent years.

There are those who deplore such developments, thinking of the crops that might be grown upon them and the cattle that might be pastured. We had an orgy of such feeling during the World War and have not yet fully recovered from it. If the people of the United States were living close to the subsistence level, there would indeed be some reason for such sentiments; but, as it is, we are actually spending by far the larger portion of our income on conveniences, comforts, and pleasures that are above the subsistence level. Only a part of what we pay as rent represents actual subsistence. As one sociologist expressed it, "We strive today not for bread, but for jam on the bread." The issue, therefore, is whether the pleasure and comfort to be derived from the direct use of land in parks or in other pleasurable ways is greater than we would derive from the additional food which we might produce. In view of the plethora of food and textiles which now afflicts us, it seems clear that the direct uses are highly to be commended, even though taxes have to be collected to provide for them. As automobile travel increases, interest will grow in providing recreation facilities of the sort which makes such travel more interesting and pleasant. More attention will be given to scenic highways, to camping sites, and trails.

The natural combination of forestry and recreation uses furnishes a special reason for expanding our forests, especially those under public ownership.

New York state has furnished the model for the rest of the states to follow in the matter of parks and recreation grounds and the combination of these facilitates with forest reserves.

We are just beginning to realize an important aspect of the problem of recreation in relation to highway travel. As will be pointed out in the chapter on Transportation, a family can travel in an automobile much more cheaply than by railway. If facilities can be provided for camping out at night, they can take an outing at relatively little cost. A combined park and highway system is therefore an important contribution to the life of people in moderate circumstances.

RESIDENTIAL USE

Any program of land utilization for the United States must figure much more largely on the use of land for residential use than has ordinarily been contemplated. A rapidly increasing number of people are living all or part of the year out in the country. The 5-day week is becoming more common with business and professional people. Factories are also moving out into the smaller towns, and workmen are living several miles from the plant and drive in each day. Travel by air may figure in this problem presently. It is significant that only in Rhode Island, Connecticut, California, and Florida is the average value of farm land higher today than 1920. It is not the use of land for farming that accounts for these valuations.

FOREIGN INFLUENCES

It is clear from the foregoing that so far as internal conditions are concerned, the United States has an abundance of land for all possible uses and for any increase in the population which is likely to occur. But one must also take account of the ratio of population to the land in other countries. Population pressure is already severe over a large part of the earth, and Professor East, after careful study of the situation in Europe, has come to the conclusion that pressure on the means of subsistence will be felt keenly even there within 100 years. He expects by that time that the cultivable portions of Africa and South America will have been developed and that the food which they produce will have gone to feed the population of the world which is increasing at the rate of about 12,000,000 per annum.

Let us assume, for the sake of analysis, that this happens. What will be its effect on the United States? There will be pressure on the nations which have raised immigration barriers like the United States, and this will be a cause of international friction. (Recent tendencies, however, indicate that the right of any nation to determine its own population by immigration restrictions will presently be firmly established.) In the second place, the increasing ratio of the population to the food supply will raise the prices of farm products the world over and cause people everywhere, even in the United States, to spend a larger proportion of their income for food and clothing. More land will be devoted to crop use in the United States and the cultivation will be more intensive. The higher prices will not only stimulate the larger production needed, but will make it as profitable as present production. Exports of farm products will be stimulated by the higher prices. The movement of the population of the United States to the cities will be checked somewhat, possibly even reversed at times, unless improvements in the agricultural and industrial arts or other economies will offset the effect of higher prices paid for food and clothing. The whole country will experience somewhat lower real incomes than otherwise would prevail. The cities will, of course, feel this more than the country. But one does not need to be unduly optimistic to believe that improvement in the arts will keep real costs from rising so far as the United States is concerned.

A NATIONAL LAND-PLANNING COMMISSION

The report of the Business Men's Commission proposed the establishment in this country of a permanent commission to consider problems of national land planning, this to be financed by a federal appropriation, but to be independent of any of the existing departments of the government. Many have doubted the value of such a commission. It seems to the author that if it were properly constituted and properly financed it could serve the nation in a very important way. The commission should consist in part of high-grade public-spirited men of the sort that are appointed to serve on important occasions, and in part of outstanding students of agriculture and other pertinent land-economic problems. None of the appointees should be connected with enterprises that have any interest in promoting land development. There should be a technical staff of men capable of making studies of areas and reporting in definite terms the conditions existing in them. The results should be published and given wide distribution.

If we had such a commission at the present time, it could make a study of the proposal to develop the Columbia River Basin. It would take into account more than the local interests of the people in that territory. It would consider the ratio of population to the food supply and trends in our imports and exports. Such a commission could review such programs as the effort of a group of railroad companies to restock the areas which were abandoned after the World War, and report to the nation on the best national policy with respect to these regions. It should have financial support enough to make careful studies of the problems which arise.

CHAPTER XVIII

MARKETING

The importance of marketing reform is apparent from the fact that the margins between prices paid by consumers and received by producers of farm products have not only failed to narrow, but have actually been increasing, during the last few years, if we may assume the indexes in Chap. I to be dependable. It is generally agreed among economists that competition is not working in such a way as to give us economy and efficiency in the field of marketing. Although small units have higher costs than the medium-sized and even large units, they do not die out, but increase in prevalence. Advertising and selling are coming to represent a larger and larger proportion of the price which the consumer pays for many articles. Competition seems largely incompetent to bring about the general reorganization of the marketing system which seems to be called for in many lines. The consumers continue paying more and more for marketing service and seem to have found no adequate ways to prevent it. Some of this is for additional service that may properly be included as part of the rising scale of living; but much of it consumers would not pay for if they knew they were doing it.

How competition fails to eliminate the inefficient and keep down the number of marketing units in the case of retail stores may be explained as follows: The new store starting in a community usually gets enough patronage away from the old stores so that it can survive long enough to force the old ones to raise their margins a little. Then all of them are on the same level of competition. Meanwhile, the consumers of the community have come to support one more marketing unit. If they appreciated the fact that in patronizing the new store they were stepping up the price of their groceries they would not do it; but they seldom realize this.

The adjustments called for in the field of marketing are in part in the nature of improvements in the organization and business practices of individual firms and cooperatives. They can be helped in this to very good advantage by associations of their own which they set up; also by public agencies which make careful studies of their problems and use the results in educational programs; and also by various types of current information service that will enable them to plan their buying and selling more intelligently. The producers themselves can be provided with a vast amount of information as to prices, competing supplies, market outlets, and shipments which will be of service to them in planning their selling. Cooperative associations need assistance of this kind even more than do proprietary units. Careful studies of the chain of processes by which commodities are moved from the producer to the consumer, and of the various marketing units and the way in which they fit together, may furnish the basis for a better integration.

It needs no argument that there must be a limited amount of regulation in order to protect shippers, insure the validity of warehouse certificates, and secure the necessary uniformity in grades and comparability of price quotations. Whether more of such regulation is needed or not, and if so, where, would be difficult to answer at this time. Experience thus far with the Grain Futures Act and the Packer and Stockyards Act does not encourage one to recommend more legislation of the same kind. Perhaps strengthening and clarifying these two acts would make them more worth while. Our national habit seems to be to pass such legislation before the problems involved have been sufficiently analyzed. One of the reasons that they are not analyzed is that the data and records are not available. It would seem that the first step to be made in a program of regulation ought to be to require certain records to be kept and made available to the proper authorities for careful study and analysis.

Of more importance is the providing of marketing services of the kinds that only public agencies can offer, that will be helpful to producers in the preparation of their goods for the market and selling; to middlemen in their buying, processing, storing, financing and selling; and to consumers in their buying.

It should be made clear at the start that these services should be made available as they are at present to all classes of users, proprietary as well as cooperative. It is commonly believed in the trade that much of the public service of these sorts is intended for cooperatives only; but at no time has it been the intention of Congress or of the Department of Agriculture, or of the public agencies in most of the states, to confine their attention to cooperatives only. It is true that the cooperatives have made freer use of most of such services. Private-marketing businesses have been disposed to accept sparingly of many forms of public aid. For example, if a short course in elevator accounting were offered by one of the agricultural colleges in the Grain Belt, there probably would be three representatives of cooperative elevators present to one representative of a independent or line elevator. Private enterprises have been disposed to fight shy of government activities of all kinds, possibly for fear of inviting unwelcome intrusion into their affairs. The records of cooperative associations are, necessarily, open to all the members, which is almost equivalent to making them public property; and they, therefore, have nothing to conceal and everything to gain from almost any form of public service.

It is also true that a few cooperative leaders feel that the cooperatives should be granted special privileges in the matter of public aid, and, in particular, special access to useful information. A little thinking should convince them that such a policy would be mistaken. It would result in having the government and the cooperatives arrayed against private business, which would create an intolerable situation, disastrous to the cooperatives in the end. But this does not mean that the cooperatives should not receive special consideration of the right sort. Secretary Jardine constantly referred to the agricultural cooperatives as "infant industries," entitled to "protection" in order to get them started in the same way that many manufacturing industries have been assisted in the past and are still being assisted. The analogy is perfectly good. In the nature of things, a cooperative enterprise is especially difficult to launch successfully. Its management and directorship is likely to be inexperienced. Much has been said to the effect that cooperatives should go out and hire the very best managerial talent available. While this is good advice, it has more often led cooperatives into error than it has helped them. It is frequently impossible for a cooperative to take away a really successful operator from private employment, and the men that have been secured have often fallen far short of so qualifying, though they have been paid salaries on that assumption. Some of them have been cast-offs of private business. When they have secured the services of really capable operators, they have commonly found them too completely imbued with the philosophy and the methods of competitive business to understand how to work in a democratically organized cooperative. They have been inclined to insist on centralizing the management altogether too much.

Before a cooperative can be really successful, sufficient time must pass to allow the membership to be rather thoroughly educated as to the nature of the organization and its functioning and their duties with respect to it. Improving the quality of the product is one of the most important bases of the success of a cooperative, and, obviously, this cannot be done in a year or two. Such an organization frequently has limited capital at the start. A common arrangement is to attempt to borrow the necessary funds and repay them out of the first few years' business by deductions from receipts. This means that the members receive smaller returns at the start. Perhaps, most important of all, trade connections and market outlets must be developed. Then, finally, private business usually becomes alarmed as to the possibility of loss of some of its volume and may resort to unfair tactics and even to a certain amount of joint action in combating the cooperative. When private business is as highly centralized as in the case of tobacco, such opposition is almost fatal to the success of any cooperative. The foregoing should make it abundantly clear that cooperative enterprises do need protection in their early stages. The question then is, What form shall this protection take? This will be discussed later.

Looking at our marketing system as a whole, its greatest weakness is its lack of integration. For the most part, it consists of a very large number of small units operating independently of each other. As a result, it frequently happens that prices are so low in the primary or producers' markets that producers cannot afford even to harvest the crop, and yet many consumers are refraining from buying because the prices are so high. Prices in the consumers' market do not quickly and adequately reflect conditions in the producers' market. The loose links in our unintegrated marketing system take up all the slack. A well-integrated marketing system would begin first of all by lowering the price to the consumer and advertising it freely. This would start a larger volume of product moving, which would reduce costs all along the line to a point where the growers could harvest much more of their crop to advantage.

Considerable progress has been made in this direction in the last 10 years. The most significant development is the chain-store system. Chain-store organizations reach forward in their buying much nearer to the producer and thus remove several of the loose links or take the slack out of them. This is well illustrated in the present season in the case of potatoes. Chain stores in New England are offering Maine potatoes at prices close to 1 cent a pound, and have undoubtedly forced their competitors to a price much more in conformity with that which the growers are receiving than otherwise would have been the case. The chain-store idea is spreading into many other lines of merchandising. Its recent important expansion is with department stores.

From the standpoint of agriculture, what is most needed is that chain stores be established which cater to a somewhat higher class of trade so as to furnish them a more direct connection with the consumers of their high-quality products. At present, carefully selected and packed farm products of uniform grade furnished by cooperatives are being sold at a wide range of prices in different stores according to the class of trade supplied. The price which the cooperative organization is receiving is largely based upon contracts made with chain store organizations catering to low or medium-class trade.

The cooperatives are destined to play a large part in the development of integration in the marketing field. They have already done more than any other group of agencies to bring producer and consumer more closely together and take up the slack in the system. Not only have producers' and consumers' prices of several products become more responsive to each other, but the margin between the two has been narrowed appreciably in the case of oranges and several other products. The general public can, therefore, heartily approve the efforts of the government to assist the cooperatives in developments to this end, by helping them analyze the processess by which goods are moved from producers to consumers and finding where the slack exists; by providing inspection at the point of shipment; by supplying as complete market news as possible; and by helping them to seek out new trade outlets.

The various marketing services which are now being provided by government agencies are all the development of the last 15 years. In this period the problems incident to the various forms of service have been studied and methods have been tested. We are, therefore, now at the point where considerable expansion of them would be highly useful. First of all, the inspection service should be increased, particularly the inspection at the point of shipment, such as now is furnished the Land O'Lakes Association on its butter. Needless to state, this service should continue to be available to private organizations as well as to cooperatives.

Although grades have already been established for most farm products, the work in this field is very far from complete. The grades established have been based altogether too much on purely technical considerations. They have been worked out for the most part by men with little appreciation of economic factors. The objective in any set of grades, from the standpoint of producers, is so to delimit them that one year with another the producers will have disposed of their total crop of all qualities in such a way as to yield them the highest net return after taking out marketing expenses. This means that the matter of how large a part of the crop finds a market and how valuable a use is found for the rest of it, must be taken into account in the making of grades. From the standpoint of the consumers, the objective is so to delimit the grades that all the different classes of consumers year in and year out will consume to the fullest possible extent, consistent with a similar utilization of other products competing for their income, the crop as it comes from the producers. A system of grades which puts potatoes into a grade that rarely finds a market, that consumers would frequently use if put in a higher grade, is uneconomical and wasteful from the standpoint of both producers and consumers. The difficult feature of such a problem is the variability of the crop from year to year, both as to quantity and quality. The system of grades which will work out best one year will not work out best another year. It is entirely possible that certain kinds of flexibility should be provided for, although such a suggestion is anathema to the technicians who have been establishing grades.

The grades which the trade had established as a result of experience were not based on technical considerations altogether, but took account of actual experience. They reflected the habits of the consumers and the producers. There is ample justification in some cases, therefore, for the opposition of the trade to the grades which the federal government has established.

Another phase of the public service in marketing is the quoting of prices. It is highly necessary that quotations be based on uniform specifications so that the price as quoted will be comparable as between markets. If such is not the case, shippers will be deceived when they choose one market in preference to another. It is also necessary that they be comparable from year to year. Otherwise, our price records will be unsatisfactory data for price analysis. These considerations would seem at first to require that grades have exactly the same physical specifications in all markets and in all years. But upon further thought it appears that quotations which take into account conditions of supply and demand for different qualities would furnish a more realistic basis for comparison of prices between years than one that was absolutely inflexible. From this point of view, in a year when the potato crop is large, so that only a small premium is placed upon such a factor as size of the tuber, the middle grade should include larger potatoes than in years when the reverse is true. But shippers and buyers would probably prefer quotations that represented the same physical specifications.

Whatever the situation is with respect to the foregoing, the method of price quoting should take it fully into account. At present, price quoting is an art without much if any scientific basis. To any statistician it will be apparent that the scientific basis of price quoting is what is known as ''frequency distribution.'' It seems highly probable that statistics can contribute something worth while to price quoting in time, and it is important that more research be directed to this end. The market news service has also reached the point where it can properly be extended. It not only needs to reach more shippers, but to be made more specific and more immediately useful.

One of the most important opportunities which public agencies have to help marketing is to carry on research, both technical and economic, in methods of disposal of temporary surpluses of perishable farm products, particularly of fruits and vegetables.

Although stabilization of planting, as already explained, will do much to reduce these surpluses, they will still remain to an important extent and will constitute one of our great national wastes. Cooperative organizations have already made notable advances in the case of oranges, lemons, apples, and sour cherries. Careful surveys of possibilities and basic technical research and experimentation will help other cooperative associations to make progress of the same sort. For example, it would be much worth while to determine the feasibility of canning some of the large surpluses of peaches that have developed in Georgia in recent years. It is reasonable to look forward to a time when canning and other forms of processing will provide a use for the surplus vegetables and small fruits that recur in every large trucking area. It is high time that the Department of Agriculture made a careful study of some important trucking area from this point of view. It stands to reason that an area which can combine some canning, even in short years, with the supplying of a local urban market, and a considerable amount of it in years of large production, has important competitive advantages in the canning industry.

An increasing volume of research, teaching, and extension work is needed in the field of the economy of organization and management of all kinds of marketing business enterprises. Research must develop an understanding of methods of reducing their costs, of price policies, of accounting, of financing, of selling, and a large number of other management problems. Much headway has been made along these lines in the past 10 years, but the work should be speeded up. Schools for the training of managers and prospective managers and employees of marketing enterprises of various kinds should be developed in all of the state agricultural colleges. More of the graduates of the agricultural-college courses should look forward to employment by marketing concerns, combining economics and business with their technical training. Education is usually from 20 to 50 years behind time. If young men in agricultural colleges had been given this kind of training 20 years ago, the marketing of farm products would be upon a much more efficient basis at present.

Although it may not appear so at first thought, probably the greatest weakness in our whole marketing system is with the consumers. More could be accomplished by a comprehensive program of research directed at determining the utilities in consumption goods and in educating consumers with respect to this than from any other program. At present, the consumer is at the mercy of the advertiser and the salesman to an extent that has made this one of the great national perils. Very little has been done to protect the ordinary consumer against such perils. What our departments of home economics in our agricultural colleges are doing is useful along these lines, but for the most part it reaches only the small number of students who come to their classes. What is needed is a great program of education that will reach consumers generally. The United States Bureau of Standards is constantly doing research work which furnishes useful information of this sort; but only a small amount of it is given out to the public. The Bureau of Home Economics of the Department of Agriculture is doing the best it can with its limited resources. Both of these agencies should receive greatly increased support, and, in addition, the Bureau of Standards should be authorized and required to publish its results more freely.

There is an organization in the United States known as the Consumers' League. It is undoubtedly rendering an important service in looking after the interests of workers in factories and stores and seeing that they are given proper working conditions. There are, however, many things about the goods which consumers buy which are vastly more important from the public standpoint than the conditions of the workers who handle them in factories and stores. One is therefore disposed to argue that the Consumers' League is using a name to which it is not entitled. Recently, another organization has begun in a small way under the name of the Consumers' Club. Many readers will recall a book which was published two years ago under the title "Your Money's Worth," by Stewart Chase and F. J. Schlink. It is a book which should be much more widely known than it is. The Consumers' Club is an organization started by Mr. Chase and Mr. Schlink with headquarters at 2 West Forty-second Street, New York City, which, to the extent that its resources permit, makes studies of all the different commodities which are offered to consumers and makes reports upon these to its members. It utilizes so far as possible the work of the Bureau of Standards, the Department of Agriculture and the departments of home economics in the states. Anyone can become a member of this organization for $2 a year and will receive all the reports now available and the new ones as they come out. It is a service worth many times more than it costs. If this club could expand so that it reached hundreds of thousands of consumers, and had an income of a million dollars a year, it would protect the public to an extent worth vastly more than what was spent for it. Unknowingly, the American people are spending hundreds of millions of dollars a year to be misinformed as to the goods which they buy by a large army of salesmen, advertising experts and a vast expanse of advertising space. It surely can afford to spend two or three million a year to support a public service or a cooperative service which will tell them the truth about the things which they buy.

Agriculture will benefit from this in two important ways; first, in that it will do its own buying much more intelligently; and second, in that its own high-quality goods will obtain a better market. Not until consumers are better informed and better protected are the best qualities of butter, eggs, and many other agricultural products going to receive their proper premium. The correlation between the quality and the price at which these and many other goods are sold at present is startlingly low.

Cooperative buying by farmers can be assisted by a public service such as just described. The cooperatives themselves can make investigations as to quality of goods only so far as their limited resources permit. Cooperative buying is definitely increasing in the United States. The basis of this increase is largely the protection which the members of such organizations are receiving against paying high prices for low-quality goods. The open-formula feeds and fertilizers which these organizations are selling are of untold value to those using them. The same methods should be extended to many other sorts of commodities.

We now come to the matter of the cooperative themselves and the protection which they should receive, especially in the early stages of their development. In this country, we ordinarily think of the term ''protection'' as meaning an enhancement in price. It is doubtful if any protective device can be developed which will secure members an appreciably higher price for a given product than is received by non-members. The method of patronage dividends to members is serviceable to this end and has already accomplished much to increase the volume of successful cooperatives. The higher prices which members of cooperatives receive from pools than are received by non-members from private buyers also contribute to the growth of a cooperative whenever it is really successful. But, unfortunately, such patronage dividends and such pool premiums are not generally possible while a cooperative is getting started. The McNary-Haugen bill proposed to assist cooperatives in two important ways: one to collect a fee on all the commodity marketed, that would be available for their use in carrying out an orderly marketing policy; and the other, by providing that contracts to export should be offered to the cooperatives whenever possible with safety. These might have proved important aids in some cases. The price-insurance plan proposed by Mr. Bledsoe would have assisted the cooperatives by enabling them to pay approximately the full value of the crop at the time of delivery. The stabilization corporation plan of Secretary Jardine's is very definitely pointed at helping the cooperatives to get on their feet, and is highly commendable from that point of view, except for the very important difficulty that the profits from the operations which it contemplates would not make the corporations financially secure. But none of these plans would give the cooperatives important price advantages.

Neither does it seem possible by any form of legislation to lessen greatly the amount of competition which cooperatives must meet in their early stages. They can, however, be protected against unfair competition, probably to a greater extent than at present. It would seem desirable to have this matter thoroughly studied by the proper authorities and probably more specific and more rigorous legislation enacted with respect to it. The studies which the Federal Trade Commission have already made furnish an excellent basis for a start along these lines.

The Capper-Volstead Act grants agricultural cooperatives immunity from prosecution under the antitrust laws so long as they do not unduly enhance the price of the product. This is a highly commendable provision and it has been reasonably administered. No cooperative organization should be allowed to work out a program for control of the product that will enable it to exact significant monopoly profits over a period; but the advantages which the public will in the end receive from the improvement in the marketing system, from the standardizing of the product and the reduction of marketing costs which a successful cooperative achieves will amply repay it for any amount of temporary monopoly or brand monopoly which a cooperative may incidentally obtain in its early stages while it is working out its price policy.

Another form of possible aid to cooperatives in their early stages is the grant to them of special credit facilities. All the recent farm-relief measures and even Secretary Jardine's stabilization plan include such features. Saving the cooperative from the necessity of making deductions from the returns to members during its first 3 or 4 years will assist very greatly. Such a provision must be administered very carefully. If the association fails, as very many of them do, it will be rather difficult for a public agency to recover its losses. Along with credit aid of this kind, therefore, must necessarily go a careful study of the proposed cooperative. Leaders in this field have been disposed to object to this kind of supervision, but they are probably unreasonable about this. It is to be feared that men of the promoting type have had altogether too much to say about the starting of new cooperatives in the past. These will find any requirement for examination of cooperatives repugnant to them because it is likely to mean the spoiling of their plans in many cases. Producers will not feel the same way about such a requirement. They will probably welcome all the study that can be given to a proposed cooperative organization. If it is of the sort that federal agencies are not willing to assist by an advance out of a revolving fund, they should know about it in advance.

In the aggregate, the most useful aid which cooperatives can receive in their early stages will be in the nature of assistance in making preliminary surveys, in planning the organization, in setting up systems of records and developing methods of analyzing them, in supplying them with data and market information and showing how it can be used, in analyzing the prices of their product and showing how to keep such an analysis currently available, and last and most important of all, in educating the members of the association in the fundamentals of cooperative procedure. In general, the most important service which public agencies can render agriculture in the United States in the field of marketing is in facilitating a great national program of education in cooperation. The bases of successful cooperation are an understanding of its principles and aims and method of operation, and the cooperative habit. Farmers that have grown up in communities where cooperative associations abound will make almost any kind of a cooperative association succeed. They go about it in the right way without much thinking about it. It is in the sections where farmers have had little cooperative experience that the problem is difficult. It is there where education must do its work.

CHAPTER XIX

TRANSPORTATION

Transportation is a major problem in the United States. No doubt a larger proportion of the income of our people goes to pay for transportation of commodities and persons than is paid for this purpose from the income of any other country. It used to be said that transportation represented one-seventh of the volume of business of the United States. That figure is altogether too low since the recent increase in automobile use. If one allows only $400 as the average cost of operating the 23,500,000 automobiles, taxicabs, motor trucks, and motor buses in operation in the United States in 1927, a sum equal to over $9,000,000,000 needs to be added to the something like $5,000,000,000 which the National Bureau of Economic Research has figured out as the income of other forms of transportation service in the United States, making a total which is probably as much as one-fifth of the national income.

A number of special circumstances make transportation especially important in the United States. It is a country of long distances with many of its large population centers widely separated by sparsely inhabited areas. There are no tariff walls to interfere with the movement of goods within this vast area. Our plane of living is relatively high, permitting great variety in consumption and the use of commodities produced in other climates both within and without the United States. Our people are able to do more traveling as a result of their higher incomes. Many of them have automobiles. It is estimated that 79 per cent of the motor vehicles registered in the world are owned and operated in the United States.

These special circumstances are constantly becoming more important. Transportation is growing by leaps and bounds.

Improvements in transportation increase the volume of transportation very rapidly, because they make it economical to exchange an increasing volume of goods, and to transport them over longer distances. It is commonly said that they lower the prices of goods to the consumer and raise the prices to the producer. While this is true so far as any pair of producing and consuming areas is concerned, they also frequently have the effect of bringing new areas of greater comparative advantage into competition and lowering the prices in old producing areas. They may also mean increasing the share of the consumer's dollar that goes to transportation. This is illustrated by the following hypothetical case in which two areas are assumed to be potential producers of alfalfa hay for an eastern market:

	Original transportation			Improved transportation		
	Cost of production	Freight costs	Total costs	Cost of production	Freight costs	Total costs
Area *A*.......	$7	$15	$22	$7	$10	$17
Area *B*.......	14	6	20	14	4	18

Area *B* is much nearer the market than *A*, and has much lower freight costs. Area *A* has favorable climate and soil and competing crops of such a nature that it can produce the alfalfa at as low a cost as $7 a ton. But even thus it cannot compete with Area *B* with the first set of freight rates, and hence is kept out of the market. Now let us assume improvements in transportation that lower freight costs one-third. If Area *B* is going to stay in the market now, it will have to lower its costs to $13 per ton. Let us assume that it cannot do so because of competing crops. Before the freight costs were lowered, transportation costs represented 30 per cent of .the market price; they now represent 59 per cent of the market price. If Area *B* stayed in the market and produced one-half the crop, the freight cost would be raised to only 47 per cent of the market price. This hypothetical case illustrates what has been happening on a large scale in the world ever since steam was first applied to transportation. The result is that our transportation bill is getting larger and larger, and transportation is taking a larger and larger slice of our dollars. And yet we are getting our produce at relatively lower prices. Products have been produced in larger and larger proportions in areas better suited to them. This has increased the available supply of food, clothing, timber, and metals, and has been a large factor in the remarkable increase in the world's population since 1800. We can expect improvements in transportation to continue, and all the other results here described to follow.[1]

HIGHWAY TRANSPORTATION

The outstanding development in the field of transportation is the greatly increased use of the automobile, which brings with it the problem of providing suitable highways. The 250,000 miles of railway in the United States are capitalized at $21,849,000,000. To build the 172,000 miles of interstate highway now laid out will cost fully that amount at present prices. To improve the proposed intercounty highways will cost nearly as much. Then there are the 2,500,000 miles of county and local highway. Assuming that the road system of the United States is half depreciated at any time, the investment in it will surely exceed by many billions our investment in railroads. Will the public stand for it? There can be little doubt that it presently will. As long as people keep on buying automobiles, they will keep on wanting good roads; and they will soon reconcile themselves to the idea of paying what is necessary to get them.

The Bureau of Public Roads has calculated that the railroad freight charges on the 88,000,000 ton-miles of traffic on the Connecticut highways for September to September, 1922 to 1923, would have been $1,620,800, and that the railway passenger charges of the 1,439,000,000 passengers-miles traffic in the same period would have been $41,285,000, making a total of $42,306,600. Over a 12-year period, the cost of maintenance-of-way for the railroads of the United States averaged 13.3 per cent of total receipts. Applying this percentage to the $42,306,600 would give $5,763,000 as available for maintaining a road system with the same carrying power. This represents 19.2 per cent of the estimated $30,000,000 value of the Connecticut road system exclusive of right-of-way, which is surely as large a percentage as is necessary to maintain a road system. Highway cost is therefore not likely to be the limiting factor in highway transportation.[2]

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[1] See the author's "Production Economics," Henry Holt and Company, New York, for further discussion of certain aspects of the transportation problem.

It is frequently stated that a large proportion of highway traveling these days is luxury consumption. There is no doubt much truth in this. Studies made in five areas, all of them heavy traffic areas, indicate from 63 to 73 per cent of the usage of passenger cars as "non-business." If country and local roads were included, the perecentages would be considerably lower. Admitting that automobile travel is largely luxury consumption would not condemn it, nor presage its decline. The incomes and levels of living of the American people are rising constantly, and this seems to be the form which most of the expansion is taking at present. The saying was spread abroad by a Chautauqua entertainer a few years ago that "the normal ambition of every right-thinking American family is to have a boy, then a girl, and then a Ford." Already it has been found advisable to elaborate the Ford a good bit; and a larger percentage of the people each year are wanting a more expensive car.

The first highway transportation problem to be considered is that of competition with the railroads. This is most important in the passenger-traffic department, and family automobile use is the most important aspect of it. The family that already owns an automobile can travel more cheaply in it than by rail. A trip in an ordinary day coach for a family representing four fares from Boston to New York and return will cost $65, and it will not be a very pleasant trip either. The gas, oil, and meals for the trip made in an automobile will not exceed over $15; and the trip will be enjoyable except in very cold weather. Time is a most important element in such a comparison. Business men can make such a trip at night both ways and save several hours. If the whole family should decide to take the night trip to save time, it would cost them about $90. On long trips, the time element becomes so important as to preclude the use of the family automobile except for pleasure use or when business can be combined with pleasure.

[2] Analysis made by Bur. Public Roads, Yearbook of U. S. Dept. Agr., 1924.

The motor-bus lines are cutting in on passenger traffic on railways in much the same way. Their advantage is that the unit cost of a trip is smaller, so that they can operate on a more frequent schedule. They also are able to stop at many more points and pick up passengers, and they make it a point to arrange their stops at the most convenient places in the towns and cities. Motor trucking is cutting in on the railroad traffic for short hauls mostly, and principally for such commodities as household goods, merchandise for country stores, and livestock, milk, fruits, and vegetables for local markets. It has the advantage over the railroads for this kind of traffic because, ordinarily, there is only one loading and unloading, the expensive trucking to the freight depot being saved, and of affording prompter service and saving considerable on packing costs.

What is happening is that the highway traffic is cutting in more and more on the railway traffic, and more and more local trains are being discontinued and local railway service is becoming poorer and poorer. The railway passenger traffic is tending to narrow down to night travel, long trips, and day service for people of low incomes who do not have automobiles. Freight traffic is narrowing down, although not so conspicuously, to the longer hauls and heavier goods. The motor transportation is serving to a certain extent to feed the railway service with traffic. The major portion of this traffic, however, the railroads would necessarily receive if there were no motor transportation. There is gain to the railways from this feeding only to the extent that it causes people to travel more than formerly or opens up new areas to occupation. This latter is of some importance in those portions of the United States where transportation service is still expanding.

Where railways are now built, they can afford to continue operating with their declining volume of business in competition with motor transportation, but they could not afford to operate if new railways had to be constructed. Also, under conditions of this sort, the general tendency is for the upkeep to be poorer and poorer, and finally for the roads to cease operation. This will undoubtedly happen in many cases. At the same time, the volume of long-distance and other kinds of traffic for which the railroads have especial advantages will tend to grow. With the increasing volume of transportation and the growth of population in the United States, more and better trains will be operated on the main lines. More of the main lines will be double-tracked.

Competition and division of traffic between these two forms of transportation can be allowed to work itself out by the slow, painful process of destructive competition, but there will be a vast amount of waste resulting. Railroads that ought to quit operating will be hanging on year after year. Bus lines will be started that have little chance of success. Areas needing better transportation service will be waiting for the issue to be settled as to the kind of service which is most likely to succeed. Competing bus lines will set about killing each other off. Rates will be frequently below costs for short periods. It hardly seems necessary that we repeat our disastrous railroad experience along these lines. Surely some measure of regulation, intrastate almost altogether, is much needed, but it should be kept at a minimum. Of more value would be a program of assisted *laissez faire*, involving the keeping of useful records and collecting pertinent data and analyzing these and supplying the results to all people interested in the problem.

The second problem with respect to highway transportation is that of planning highway improvement. The need for this was recently very strongly presented in a paper before the American Farm Economics Association by Dr. J. Gordon McKay, until recently Chief of the Division of Highway Economics of the United States Bureau of Public Roads, in the following:

> There is no satisfactory reason why state and county highway departments cannot establish a definite plan of improvement, based on traffic and engineering facts, for periods of at least 5 years and preferably for 10 years. Such a plan will insure continuity of development, the improvement of routes in the order of their traffic importance, the elimination of political influence, which in many cases dictates the betterment of a highway or section of a highway, the expenditure of public funds on projects which should be completed first, and the prevention of either overdevelopment or underdevelopment of a highway or section of a highway system. . . . We have passed the period in highway development when individual judgment, political pressure, or any factors other than traffic, engineering, and financial facts should be accepted as a basis of determining highway betterments. The facts which should guide the establishment of a program of improvement

can be ascertained at a comparatively small cost, and the various jurisdictions responsible for highway improvements should be required to establish a definite program prior to the appropriation of funds.

The following pertinent facts and conclusions from Dr. McKay's paper, which embodies the results of several years of work by his division, frequently in cooperation with state agencies, mark out the outlines which such planning must follow:

The building of a concrete, brick, or an equivalent high-type surface on highways, which will not, under average conditions, carry approximately 1,500 or more vehicles per day within 15 years of the period of improvement, is an unsound investment of public funds, an unnecessary burden on the sources of highway income, and defers the early improvement of other sections of the highway system.

The greatest daily density of traffic is found on the highways adjacent to centers of population and motor-vehicle ownership, and this traffic is predominantly local in character. Of the 11,000 miles of the State Highway System of Ohio, only 7.8 per cent carried 1,500 or more motor vehicles per mile per day, and 70.6 per cent carried less than 600 vehicles per mile per day. Daily motor-truck traffic is small in volume on a large mileage of the rural highway system, and the daily volume of large-capacity trucks is an unimportant part of total traffic. Also 72.5 per cent of the mileage carried less than 60 trucks per mile per day, 48.2 per cent of it less than 30 trucks per mile per day. Motor-truck transportation on rural highway systems averages 10.0 per cent of total traffic. Two-thirds of the passenger-car trips are less than 60 miles, and three-fourths of the motor-truck trips are less than 30 miles. Long-distance traffic is small in volume, and the facts supporting the improvement of rural highway systems clearly show that local traffic comprises a large percentage of total traffic on all highway systems, except on the highways of a comparatively few important tourist areas. On the 11,000 miles of the Ohio State Highway System, 10.2 per cent of the daily passenger-car use was by vehicles owned outside of Ohio, while on the 1,454 miles of the New Hampshire State Highway System over 50.0 per cent of the total traffic consisted of foreign vehicles. Of the total traffic on rural highway systems, approximately 80.0 per cent of the traffic travels on the state highway system, which averages 10.0 per cent of the total rural mileage among the several states. The average daily density of traffic per mile on the rural highway systems of Pennsylvania was 635 on the state system, 306 on country highways, and 29 on township roads. The average daily density of traffic per mile on the rural highway systems of Ohio was 538 on state highways, 132 on county highways, and 26 on township roads.

On rural highway systems, based on present and expected future traffic during the next 15 years, the construction of surfaces in excess of a width sufficient for two lanes of traffic, preferably 20 feet, is unnecessary, except on a very small mileage of the state system adjacent to the larger centers of population and a few of the major traffic routes connecting the larger cities of the country. A corollary of this general rule is that the present acquisition of highway right-of-way in excess of 60 feet, under normal conditions, is unwarranted on the state highway system, except in a few areas of dense traffic. With respect to the protection of right-of-way for future highway use, it is a more economical policy for the state to establish building set-back lines rather than to acquire right-of-way in excess of 60 feet, since the acquisition of additional width for future use usually requires an outlay of public funds, takes rural land out of production, and involves the state in maintenance expenditures for the additional unused right-of-way.

Rural highway systems beyond the zone of traffic influence of large cities on an average of 30 miles, do not and will not in the future carry large daily volumes of traffic. During the period of the next 15 years, approximately 5.0 per cent of the total rural mileage of the country will require major types of paved surfaces to serve traffic satisfactorily.

It is difficult to visualize the improvement of a considerable percentage of county highways or township roads with a surface superior to a low-type "all-weather" road, when traffic using these roads for a large part of the county mileage of the State of Ohio, a typical agricultural-industrial state, is less than 50 vehicles per mile per day, and on the township roads of the same state 29 vehicles per mile per day.

A policy of overdevelopment of a highway system is more dangerous than a conservative improvement policy based on the stage-construction principle. More attention should be directed to the formulation of effective legislative policies which will scientifically control the determination of highways requiring improvement, their location, type of construction, and equitable methods of financing highway improvements by state, county, and local highway authorities.

Dr. McKay also suggested that legislatures need to study the organization and functioning of state and county highway departments and methods of securing the necessary control. But more important is supplying those in the highway service with needed information, and helping them to make useful surveys.

To this end the work of the United States Bureau of Public Roads should be more liberally supported than at present, and likewise most of the state highway departments.

A third problem is that of financing these highway improvements. This will be taken up in the chapter on Taxation.

RAILROAD TRANSPORTATION

The railroads of the country have problems other than competition with motor transportation which have a bearing upon agriculture, but most of these are too large and complex to be discussed understandingly by one not a specialist in that field. Nevertheless, it will not be amiss to call attention to a number of points made by others who have worked in this field.

1. The index of freight rates on farm products is still around 160, while that for prices of farm products is under 140. Railroad stocks have been moving upward for some time, whereas land values are still declining. It would appear that profits from railroads are reaching the point where some rate readjustments are possible.

2. The method of raising rates by flat percentages employed during the World War period has worked out unsatisfactorily with respect to farm products, since it has resulted in much larger absolute increases in transportation costs of bulky goods, whose freight rates are a large proportion of their value, and also on long hauls. Thus a 60 per cent increase in freight rates would probably represent less than 1 per cent in the increase in price which has occurred on dress goods, whereas it may represent over one-half the rise in price of certain farm products hauled long distances. Any further adjustments in the rate structure should attempt to correct for these effects.

3. It is questionable whether the present tendency to base rates somewhat more on cost of service and less on value of service has not been carried too far. No one will deny that some attention must be paid to the actual expenses of handling the different classes of commodities. Otherwise, the railroad which hauls bulky goods largely may find itself operating at a loss, and the one which has a high proportion of valuable goods may find itself operating at a considerable profit. But it is very easy to go wrong in working out a system of rates based on costs. All

students of rate making agree that costs calculated by any methods now in use, or likely to be developed, have a large element of fiction in them. The Interstate Commerce Commission must rather depend upon observing the effect of its rate changes on the net incomes of the railroads with different proportions of the various classes of goods. So far as results observed in this way will permit, value of service and public policy in general should be taken into account more than relative expense as determined by cost analysis. It must be remembered that the point of view of the Interstate Commerce Commission should not be that of equalizing the profits of all the companies, but that of making the railroad systems of the United States serve the public needs as amply as possible. This does not permit it to neglect the profits of the individual railroads, but it does require it not to exalt such an objective.

4. Progress should be made as rapidly as possible in unifying the railway system of the United States, and an important consideration in any combinations that are made is securing a proper balance of classes of freight.

5. Too much pressure has been submitted in favor of maintaining the existing territorial organization of the country, and not enough emphasis has been placed upon assisting the development of industries in the newer areas. It should be a part of public policy to decentralize manufacturing as much as economically possible, and to develop it on the Pacific Coast and in the Southern states and wherever resources are available; and the railroads rate structure should be made to assist to this end rather than to hamper it, as at present. The importance of this to agriculture is that it will provide widely disseminated local markets for perishable farm products.

6. Care must constantly be given to the valuation of the railroads lest too large a portion of the social increment be included in the capitalization.

WATERWAYS

Waterways have received much attention in all of the recent discussions of the program of farm relief. This is in spite of the fact that the whole drift in transportation the world over is away from the use of inland waterways.

The decline in river traffic has usually been attributed at the time it has happened to the growing size of carrier demanded by modern commerce and, hence, vast sums have been spent upon widening and deepening canals and improving rivers. New York has recently spent $150,000,000 upon the Erie Canal; but the traffic is even less than it was before the canal was deepened. Over $600,000,000 was spent upon improving the Mississippi, between 1896 and 1920. Probably an equal amount has been spent upon all other rivers combined. But the improved rivers are used only for pleasure excursions in most cases.

Inland waterways are today used only under the following circumstances:

(*a*) In regions not yet developed and supplied with railways.

(*b*) In regions long occupied, but not yet supplied with railroads because of the poverty of the people or their industrial backwardness. This accounts for the great use of the rivers of Russia and China.

(*c*) Upon rivers deep enough so that ocean-going vessels can make inland river ports, such as Montreal upon the St. Lawrence, Rosario upon the La Plata, and Manaos 850 miles up the Amazon. Short ship canals, such as the Manchester Canal, 28 miles long, can be built to serve similar purposes. This use of rivers illustrates one of the most important principles relating to transportation, namely, that water-borne traffic always seeks the port which is farthest into the interior of a continent.

(*d*) Upon large inland lakes, such as our own Great Lakes, the Caspian, and the large lakes of Central Africa.

(*e*) Upon rivers and canals so located as to carry a large volume of slow-moving freight, like the Rhine in Europe.

(*f*) Upon canals that greatly shorten ocean routes, like the Suez and the Panama canals, or even the Kiel Canal cutting through the Danish Peninsula, or that provide passage around falls upon important watercourses, like the Soo and the Welland canals.

(*g*) In densely populated regions with low wages.

Some of the important limitations upon inland water transportation are the following:

(*a*) Many of them are frozen over or at low water during part of the year. This means that railroad facilities must be provided to take care of the traffic of the rest of the year. Hence, only the additional cost of the competing traffic of the railroads is properly charged against it.

(*b*) Water transportation is too slow for perishable or valuable freight and for passenger traffic. One of the reasons that river traffic is slow is that river courses are generally tortuous. The railroads always get this traffic in summer as well as in winter.

(*c*) Much of the traffic originates at or is destined to points away from lake and river ports. Transshipment is expensive and destructive.

(*d*) Many river courses run in the wrong direction. The Mississippi runs crosswise of most of the traffic in the United States.

(*e*) The costs of improvement and maintenance of many river courses are very high.

If we apply the foregoing analysis to the problem of a Great Lakes-St. Lawrence Waterway, the first observation to make is that such a waterway will take water-borne traffic far into the interior of a continent. It will not simply reach one interior port, but a vast expanse of lake shore, with perhaps as many as ten ports.

Most people have not thought enough about the economy of the interior of a continent to appreciate what transportation means to it. Without cheap ocean transportation to the exterior, it must have a price structure including low levels on all the goods it sells and high levels on all the goods it buys. It is compelled to convert its raw materials to finished form in order to save transportation costs, and to buy many of its finished goods in the same form. Open up such a region and the organization of its production will be radically changed—new industries will come in, a population will grow, new local markets for farm products will develop. But this will not take place overnight. We may interpret the foregoing in terms of the Great Lakes-St. Lawrence system by supposing that it had been opened to ocean-going vessels from the beginning. In spite of the handicaps of closed navigation during the 5 months of the year, settlement would have taken place at an early period on the shores of the Great Lakes, and there would be at present a considerably heavier concentration of industry and population in the region. If we open up this waterway system at this late date, a tendency will be toward this same degree of concentration, and it will gradually be realized in considerable measure, probably never wholly. How long will it take? No doubt it will still be underway in 50 years. Certain changes will take place rather quickly, in 5 or 10 years; but these will not be very important.

The reason that it is easy to exaggerate the final effect on the distribution of industry and population of this waterway development is that it falls very far short of being an ideal opportunity for the interior development of a continent. The fact that it is closed for 5 months of the year is its most serious shortcoming. Another is that most of the slow-moving freight, such as principally benefits such a waterway, is already hauled over the Great Lakes. It becomes a question of how much more traffic could be expected to develop. The additional heavy traffic from the Great Lakes area will be mostly outbound and there will be insufficient return cargo.

The reason that so much time is needed for such readjustments as the foregoing, is that at the start all the facilities are provided for continuing traffic, trade connections and production as they are, and almost a new generation of new business enterprises must appear before as good facilities are available for business organized to take advantage of the improvements. At the start, as Dr. Nourse has pointed out, the improvements may actually help many manufacturing plants in the East by providing them cheaper raw materials from the North Central region.

As to how much agriculture can expect to benefit from it, especially in the near future, Dr. E. G. Nourse, of the Institute of Economics, has made the sanest analysis which has thus far appeared in print in the paper which he read before the American Farm Economic Association in Chicago in December. He shows that the existing St. Lawrence canals have been handling an increasing amount of grain of late, establishing a new record of 107,000,000 bushels last year. Much of this was Canadian grain. This large volume already has the benefit of a low water rate. The total for the five principal grains moving from the Great Lakes and North Atlantic ports in the United States during the 7 summer months of 1927 was only 137,000,000 bushels. By no means all of this latter would be diverted to the improved St. Lawrence waterway. Dr. Nourse's estimate is that only

90,000,000 bushels of it could be so diverted. Considerable grain is carried from the North Atlantic ports to Europe at very low rates as ballast for ocean liners. Other grain goes to non-European markets. The saving per bushel which the Great Lakes-St. Lawrence Tidewater Association is now using in its calculations is 5 cents per bushel. There is evidence that this is amply high. The direct saving in transportation costs on the additional grain handled over the improved highway, therefore, would be $4,500,000. To this amount, the author would be inclined to add perhaps another million for the saving on additional export production that would be stimulated by the higher prices at the farm.

In calculating the indirect gains, that is, the gains from higher prices on grain not shipped at all, or shipped over the railroads, as a result of the higher prices established at the farm, Dr. Nourse very properly rules out the corn crop, since the form in which it is exported is not corn but pork products. It is true that a fraction of 1 per cent of our corn crop is exported as corn, but most of this goes to Canada, Mexico, and the West Indies; and St. Lawrence transportation, and the reduction of the rates to the eastern seaboard, would stimulate very little increase in exports. A similar statement must be made for the oats crop, of which only 1.5 per cent is exported in the first place, and what exports there are are mostly in the form of oatmeal, or whole grain to Canada. This leaves wheat, rye and barley, whose production in the territory tributary to the Great Lakes, and likely in any way to be affected by improving the waterway, less the amounts already being shipped out over the St. Lawrence system, equals 480,000,000 bushels of wheat, 120,000,000 bushels of barley, and 25,000,000 bushels of rye, a total of 625,000,000 bushels. This amount has to be reduced somewhat by reason of the fact that for 5 months of the year this grain would be unable to move out over the St. Lawrence, and the effect of the waterway on prices would be only partly felt. An effort would be made, however, to do most of the exporting before the waterway closed, and hold the rest until navigation opened again in the spring. In the second place, the level of prices in the region at present no doubt reflects the low rates now received on the wheat, barley, and rye exported over the present St. Lawrence system. Hence there will be left only the effect of the further reduction in the rates that the waterway improvements will make possible. In the third place, any territory which is now exporting grain through other ports, but finds the St. Lawrence outlet more economical after the improvements are made, will not be able to count the full effect of the savings over the St. Lawrence route. There will be additional freight hauls in order to get the grain to the Great Lakes ports. A possible other element in the situation is that railroad rates will be reduced somewhat on some grain to eastern markets which is not actually diverted. It is easy to exaggerate the importance of this item. It must be remembered that the existing rate structure on such railroad traffic allows fully for the competition of the present St. Lawrence system.

Alfred H. Ritter, in his book "Transportation Economics of the Great Lakes-St. Lawrence Ship Canal," estimates that the price enhancement at the farm on the grain in the tributary area not actually shipped over the St. Lawrence system will be five-eighths as much as that actually shipped. Dr. Nourse's method of calculating brings the figure down nearly to one-quarter. The author would be inclined to think 40 per cent would be an ample estimate. This would equal 2 cents per bushel, or $12,500,000 on the 625,000,000 bushels, which, added to the $5,500,000 direct gains, would make a total of $18,000,000 additional gross receipts on grain production in the area. Dr. Nourse's estimate is around $11,000,000.

After careful analysis of the probable traffic in packing-house products over the improved St. Lawrence system, Dr. Nourse arrives at an estimate of only 84,000 tons annually, made up of the least perishable forms of beef and pork products, such as pickled or cured beef and veal, canned beef, pickled or canned pork and sausage, lard and tallow and animal fats. The managers of packing plants with whom he discussed the problem were of the opinion that mild-cured pork products would have to depend upon speedier transportation and refrigeration service not likely to be economical on Great Lakes boats. As for dairy products, exports are very light at the present time and not likely to expand. The estimated saving per ton of packing-house products is $11. This makes approximately another million to be added to the gains on grain.

Some allowance must also be made for other still more indirect effects on prices of farm products in a tributary area. Whenever prices of some farm products rise, and a certain amount of competing production is shifted to them in consequence, the prices of the other products are increased a little, so that presently unless new influences arise the whole of the production is on a slightly higher price level.

The gains from lower prices of the commodities which farmers will buy are even more difficult to calculate than those on the products sold. Fertilizer would offer very important opportunities along this line, except for the fact that at present most of the consumption of fertilizer is along the Atlantic and Gulf seaboards. Some new fertilizer plants would probably be established in Great Lakes ports, particularly in Chicago, in consequence of it, and as fertilizer use increases in this section, this will be a factor of some importance. It may prove economical to ship mill feeds and corn from this region to the Atlantic states rather than by rail, if tariff rates are placed so high that they exclude all corn from Argentina. Probably most of the gains to agriculture on the buying side will come from the shifting of certain lines of manufacturing nearer to them, and thus giving them certain savings from shorter hauls on finished products, just as at present farmers may be benefiting from the shifting of fabricating plants to the Chicago area following the abolishment of the Pittsburgh plus system. They will also gain eventually from the somewhat enlarged local markets for perishable farm products. Obviously, it is impossible to make any estimate as to gains to agriculture from this source; but they must not be overlooked in any analysis of the problem.

It does not seem unreasonable to the author to assume that farmers in the tributary area in the United States may benefit from improving the Great Lakes-St. Lawrence system by an amount somewhere around $20,000,000 or an average of something like $10 to $12 per farm.

Urban populations in the tributary area will save along with the farm population on the prices of some goods coming in from the outside; but their food products will cost them a little more.

Dr. Nourse estimates that the cost of the proposed improvements of the St. Lawrence system, on the basis of the engineers' estimates for the lake and channel developments, will be $540,000,000, consisting of $250,000,000 for the 27-foot lake and river channel (without power developments), $40,000,000 of interest on this amount at 4 per cent during the 8-year construction period, and $250,000,000 as a minimum necessary to improve ten ports on the Great Lakes so that they can take advantage of the new transportation. Apparently the United States will have to pay at least 60 per cent of the cost of the lake and channel developments. Engineers' estimates for such developments have invariably been too low. Dr. Nourse states that the Panama Canal cost more than double the maximum figure submitted by engineers, the Suez Canal two and two-thirds times as much, and the Chicago Drainage Canal three and one-half times as much. If the engineers' estimate of $250,000,000 is half what it should be, 60 per cent of the total cost will be around $500,000,000. If the system of paying for the canal which is worked out makes farm people pay for one quarter of it, agriculture will have made a capital outlay of $125,000,000, in return for which it will have annual gains of $20,000,000, according to the estimate above. If the above analysis is reasonable, allowing as much as 15 per cent for interest, maintenance, and depreciation would still leave the farmers a slight margin of profit from the enterprise. These estimates are mostly in terms of the more immediate effects. The long-run developments will be the more significant. At $11,000,000, which is Dr. Nourse's estimate, the economy of the proposal would be more questionable.

The conclusions of Mr. Ritter are that the United States will benefit to the extent of $180,000,000 a year from the proposed St. Lawrence development. He reaches this figure by including the whole of the corn and oats crops, using 8 cents in place of 5 cents a bushel as savings on the diverted traffic, and allowing 5 cents in place of our 2 cents as the indirect effect on prices.

No safe analysis has been made of the economics of the proposed Mississippi River development. Most of the statements presented are like those of Mr. Ritter about the St. Lawrence proposal.

In view of the tendency in the world away from river transportation, and our own discouraging experience with it thus far, we should proceed very cautiously with the Mississippi project.

CHAPTER XX

IMMIGRATION AND FARM LABOR

The relation between the agricultural problem and national immigration policy has received a surprising amount of attention in discussion of the subject in the press and by the various committees and commissions. In general, the policies discussed or proposed may be put under the four following heads:

1. Those involving either raising or lowering the general level of the immigration barriers, ordinarily making use of the quota principle for distribution of immigration between countries.
2. Those proposing to extend the barriers to include Mexico and other American countries.
3. Those proposing some other principle of selection, such as occupation, and frequently having in mind favoring farm laborers.
4. Those proposing to adjust the rate of immigration to conditions of employment in the United States, possibly taking account of differences in unemployment in different industries.

Most important of all to realize at the start is that any policy with respect to immigration as it affects our agriculture is a policy with respect to our farm population. The principal facts as to the nativity of our farm population are given in Tables 35 to 38.

Table 35 shows that at present 4.7 per cent of the population is still foreign-born white. There has been no decline of any note until recently. The percentage of foreign or mixed parentage will continue high for another generation; but in the second generation most of these peoples adopt a scale of living which is much more nearly like that of native-born farmers. Table 36 gives similar data for all the states whose farm population in 1920 was more than 10 per cent foreign-born. In a number of these states the percentage has been increasing of late. Table 37 shows that the predominant foreign stocks are still Germans and

Scandinavians and others from the north of Europe. Poles and Bohemians from Russia, Austria, and Poland, and Italians, Finlanders, and Mexicans are figuring increasingly in the recent foreign-born farm stocks. The complete list includes Portuguese (from the Azores), Rumanians, Greeks, and a considerable number of such nationalities. Table 38 indicates the location of the

TABLE 35.—NATIVITY AND PARENTAGE OF WHITE RURAL POPULATION IN PERCENTAGE OF TOTAL, 1890 TO 1920

	1890	1900	1910	1920
Native white	75.7	76.8	77.4	78.7
Native parentage	63.3	63.2	64.1	66.6
Foreign or mixed parentage	12.4	13.6	13.3	12.1
Foreign-born white	8.7	7.5	7.5	4.7
Total white	84.4	84.3	84.9	83.4

TABLE 33.—NATIVITY AND PARENTAGE OF FARM POPULATION IN SELECTED STATES IN 1920

State	Native white			Foreign-born white	Otherwise
	Native parentage	Foreign parentage	Mixed parentage		
Massachusetts	51.8	20.7	8.2	18.8	0.5
Rhode Island	60.7	17.4	6.1	14.4	1.3
Connecticut	48.2	23.9	6.5	20.8	0.6
New Jersey	62.0	15.8	5.0	13.5	3.7
Michigan	54.8	18.8	12.7	13.2	0.5
Wisconsin	43.2	27.5	14.7	14.1	0.4
Minnesota	34.4	31.5	16.5	17.4	0.2
North Dakota	28.2	34.7	14.9	21.0	1.2
South Dakota	44.8	24.8	14.5	13.0	3.0
Montana	53.1	17.6	11.1	14.9	3.3
Arizona	46.6	6.3	4.7	15.1	17.3
Nevada	45.8	15.2	9.7	17.2	12.1
Washington	54.9	16.6	10.2	15.5	2.8
California	47.5	16.6	8.7	18.4	8.8

various foreign nationalities. The four New England states listed are receiving a good many Italians, Russians, and Poles. The Portuguese are locating in California mostly, but to some extent in Massachusetts. The largest group of Finlanders is in the cut-over regions of the Great Lakes states. Germans and Scandinavians still constitute the bulk of the foreign born in the North Central states.

TABLE 37.—NATIONALITY OF FOREIGN-BORN WHITE FARM OPERATORS IN 1920

	Per cent
Germany	24.2
Sweden	10.4
Norway	8.9
Canada	8.4
Russia	5.6
Austria	5.2
England	4.6
Denmark	4.4
Italy	3.1
Poland	3.0
Ireland	2.9
Holland	2.7
Finland	2.6
Switzerland	2.2
Mexico	2.1
Other	9.7
Total	100.0

TABLE 38.—NATIONALITY OF FOREIGN-BORN WHITE FARM OPERATORS IN ORDER OF THEIR IMPORTANCE, 1920

Massachusetts	Canada	Ireland	England	Italy	Russia	Sweden
Rhode Island	Canada	Italy	England	Germany	Sweden	Ireland
Connecticut	Germany	Russia	Poland	Italy	Austria	Sweden
New Jersey	Italy	Germany	Russia	England	Austria	Hungary
Michigan	Canada	Germany	Finland	Holland	Sweden	Poland
Wisconsin	Germany	Norway	Sweden	Poland	Austria	Denmark
Minnesota	Sweden	Norway	Germany	Finland	Denmark	Canada
North Dakota	Norway	Russia	Germany	Sweden	Canada	Denmark
South Dakota	Germany	Norway	Russia	Sweden	Denmark	Holland
Montana	Norway	Canada	Germany	Sweden	Russia	Denmark
Arizona	Mexico	Germany	Russia	Canada	England	Denmark
Nevada	Italy	Germany	England	Switzerland	Denmark	Canada
Washington	Sweden	Germany	Norway	Canada	Finland	England
California	Italy	Germany	Portugal	Canada	Sweden	England

The report of the special committee of the agricultural colleges stated that the need for farm labor is acute in certain sections of the country, but did not approve the supplying of this need by lowering the immigration barriers in any way. It urged instead the "tightening of the present restrictions as they apply to races that are not readily assimilated." The Committee's reasons for this decision were rather more social than economic. "National immigration policy should never be based solely upon economic considerations" (page 27). It did point out, however, that increasing the labor supply would have the effect of expanding agricultural production. The conclusions of the Business Men's Commission were that a general lowering of the immigration barriers would be of some benefit to our agriculture both by cutting down on the production of agricultural commodities in the other countries to which the immigrants go instead, and by increasing the demand for such commodities here; but that long-time "economic, political and sociological considerations" justified foregoing the first-named benefits. More than that, it urged the application of immigration restriction to Mexico, even though it would probably injure those farmers who employ Mexican labor. Its final conclusion was that:

> The solution of the problems of agriculture does not lie in the direction of putting on the land those workers who will take the wage which a low yield affords, but rather in raising the yield to the level which high-wage men demand.

This last statement faintly suggests a consideration which the other report failed completely to name, which in the judgment of most agricultural economists is most important of all; namely that wherever people of European origin become farmers in the United States, they tend to establish the same low scale of living to which they are accustomed. They receive the same price for their products as their neighbors and hence have a larger surplus with which to buy land, and presently drive the original population from the land. Such peoples usually have large families in the first generation, and their sons are likely to be farmers too. By this process largely, a few small settlements of Swiss farmers in Green County, Wisconsin, have spread until they reach into the adjoining counties to the north and west. By such a process, a settlement of Dutch farmers in a township in Dodge County, Wisconsin, has spread far beyond the township in which the settlement was made. Such people are usually described as excellent farmers or as ''efficient'' farmers. It is true that they take better care of their crops and livestock and obtain a larger product per acre; but they do not get as large a return per man. The higher return per acre combined with the low scale of living enables them to outbid the native farmers for the land. When this process started in California with the Japanese, the native farmers became alarmed and passed laws prohibiting the ownership of land by the Japanese. In the rest of the United States usually this process has been allowed to go on because it has been assumed that the foreign stock was of the same race as ourselves and would be assimilated; but that it has been a major factor in keeping down the scale of living of our farm population will not be doubted by anyone who has observed the process in operation.

The other circumstance which has tended to keep rural living on a low plane is that a large part of American agriculture is still only a little way removed from the pioneer stage, and the habits of living learned there are still strongly manifest in the attitudes of the farm population in these regions.

No argument is needed to prove that the standard of living of a people is a major factor in determining its income. The number of hours per day that a people will work for a given return of comforts and conveniences of life, and the amount of these things of which they will deprive themselves in order to get ahead financially, are largely what determines what their income and living will be. The population which works hard for a small return is simply selling its services cheap, and incomes will be accordingly.

The short-time point of view with respect to immigration and agriculture mostly relates to the supply of farm labor. It was well expressed by a president of the Minnesota Farm Bureau Federation several years ago, who said that the best argument he could name for the building of the Great Lakes-St. Lawrence Waterway was that it would make Duluth another Ellis Island and supply the Northwest with an abundance of cheap foreign labor that would be of great assistance to the agriculture of the region. When the argument is set up on this basis, the method of meeting it is to call attention to the fact that 24 per cent of the farm laborers in the United States are members of the farm family working on the home farm, and a very large percentage of the rest of them are sons of other farmers working for their neighbors. The farm proprietor and members of his family do four-fifths of the work on American farms. Cheap foreign-born hired labor will increase the profits of farm operators for a while; but at the same time it will lower the wages of farmers' sons working for their neighbors. It will also presently begin to lower the level of returns to the proprietor and the members of the farm family doing the rest of the work on the home farm. The present level of wages of farm labor, with 169 as its index as compared with 172 for farm incomes, is proof of this. One of the ways in which this will come about is that farmers will hire more labor because it is cheap and will use less power and machinery. They will also produce more and lower the prices of farm products. Returns to the members of the farm family will be less both because their labor is less productively used and because of the lower prices. The other way in which the same result is brought about is that presently some of the foreign-born farm laborers become tenants. They out-bid the native-born sons for farms because they are willing to take smaller returns for their own labor. The result, as pointed out above, is that within a generation or two a very large percentage of the farms are either rented or owned by the foreign born, and the level of rents and land values is high because based upon willingness of these people to work for a low return and low standard of living.

Lowering the immigration barriers for farm labor especially would permit the growing of a larger acreage of hand-labor types of crops such as sugar beets in sections of the United States far removed from Mexican sources of supply. The employers of such labor, given sufficient tariff protection for their product, would make some additional profits as a result. The usual aftermath of such a procedure, however, is that in 10 or 15 years the foreigners begin growing these crops for themselves, and presently are growing nearly all of them. The final result is a group of foreigners living under a low scale of living with large families working very hard at hand types of agriculture. If the immigration of such peoples is carried very far, and the above-described process works out in a normal way, we presently have the level of prices of such products determined by people with these low standards of living.

Consider for a moment the situation in the cotton states. The supply of negro labor handed down from slavery days has made it possible to continue this crop and sell it at prices so low that, as indicated in an earlier chapter, no crop has ever been so short that a still smaller one, including the carryover, would not have sold for more money. Not until cotton is grown with high priced labor and machinery will the incomes of its producers be equal to those of farmers in other regions. Importing cheap foreign labor with low standards of living to take care of hand-labor crops is almost equal to maintaining a system of peonage in the country; and peonage is economic slavery.

Lowering the immigration barriers for farm workers especially would also assist to some extent in securing the occupation of abandoned land in the East, cut-over land in the Great Lakes states, and the 40,000,000 acres of now unutilized reclamation land. Not only the lower standards of living of these people, but their being accustomed to self-sufficing farm living, enable them to subsist on these sorts of land much better than do the native stocks.

No doubt the foreign families who live in our cities for a period and then move onto land in such regions get ahead better financially after the move. The quality of living may actually be improved. These two statements must not be allowed to pass, however, without a further remark that a great deal of suffering is constantly resulting from mistaken moves of this sort. Thousands of foreign-born families who have moved from the city onto farms in such regions are starved out each year. But, in general, so long as we are permitting a considerable immigration, it is desirable that there shall be a steady stream of such people from the cities to agricultural regions after they accumulate sufficient savings in the cities. Those who have compared the conditions under which these foreign people live in the cities and in the rural sections to which they migrate, are mostly of the opinion that they are better off in the country than in the city.

But no one who has studied the conditions under which these people generally live in the early stages of their settlement and even later, would advocate a general policy of importing foreign farm stocks to occupy our submarginal land. If such settlements are successful in a sense that enough families stay to produce a growing community, there presently results an overpopulated, more or less isolated foreign group area, from which an improperly educated, un-Americanized surplus of young people flows out to the other areas and to the cities. In general, the young people do not move out fast enough, so that the living conditions are bad. In the summer of 1915, the author found farm wages as low as $28 per month, and factory wages in nearby cities $1.25 per day, in sections of Wisconsin settled a few generations earlier by foreign stocks from central Europe, and farm wages in other counties of the state with a native-born population on larger farms, as high as $45 per month. It is clear that the nation much prefers to have agricultural conditions as in the second of these two areas. We are not interested in a large agricultural population on a low scale of living, but, instead, in a population living on a high level, especially of education and health. The more densely populated foreign agricultural sections not only produce a rural civilization of an undesirable type, but they supply the agricultural markets with farm products at low prices and cause the rest of the farm population either to have lower incomes than should be, or to farm large acreages extensively in order to get enough income.

Agriculture is also interested in immigration from the point of view of its effect on conditions in cities. The barriers raised following the World War kept out a flood of immigration that would have reduced wage levels in cities and, in consequence, rents, transportation costs, and middlemen's margins; and prices of farm products have no doubt suffered somewhat. Lowering immigration barriers would reverse this process to some extent. But the overwhelming conviction of all thoughtful people in the nation is that such a policy would be undesirable. Not only would it be difficult to assimilate successfully the larger numbers of foreign born, but the per-capita income and scale of living of the people of the United States would be reduced, for the simple reason that the country as a whole is beyond the point of diminishing average returns except as improvements in the arts may have an offsetting effect. The rate of immigration may well be rapid enough—it apparently was in the first 10 years of the present century—to rob us completely of whatever gains are made from improvements in the arts.[1] Agriculture suffers along with the rest in any development of this sort.

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[1] See KING, "Wealth and Income of the People of the United States."

Some farm leaders argue that agriculture cannot expect to improve its state until urban wages are lowered; but most farm people have been pleased to see the condition of the American working man improve somewhat in the last 10 years. They recognize that there still is much poverty in our cities, and would like to see it still further alleviated. The rate of profits has not been high in a number of important industries, notably textiles; but in the aggregate it has furnished ample demonstration that the wages working men have received have been supported by their contribution to the product. Agriculture recognizes that its problem is not to bring urban wages down to its level, but rather to raise its income up to the level of industrial and mercantile wages and profits.

The conclusion at which one arrives from the foregoing is that agriculture does not really want to have the immigration barriers lowered. The present basis for determining national quotas is not a very satisfactory one, but to find one that would work better without producing international friction would be difficult. There should be no special arrangements for permitting entrance of agricultural laborers. Even if this were desirable it would be difficult to arrange, for the reason that any provision designating certain immigrants as intended for agricultural employment would not be enforceable except at great pains. All who have studied settlement problems agree that under modern conditions immigrant families should not go directly to the land with the hope of developing farms. The least amount of money which a family should have before it starts developing a home in the cut-over regions of the United States is $2,000, and $4,000 will be needed unless there is certain opportunity for labor in factories, sawmills, logging camps, or mines in the area. It is much better in these days for foreign families wishing to become farmers in the United States to go to the cities and accumulate several thousand dollars before trying to develop a farm. Foreign-born single men with an ambition to be farm owners ought to be farm laborers for several years before trying to operate farms of their own.

FARM LABOR

The cry of scarcity of farm labor has apparently been heard in all ages. There never has been such a supply of it but that still more of it would have been used if it were cheap enough—and if the employer did not have to feed it and clothe it. The system of slavery had this to recommend it that the employer of the labor had to sustain it, and if he was a good husbandman he fed it well enough to keep it in good working condition. Under conditions of free service, in many areas and on many occasions, the wages paid have not been adequate to feed and clothe the laborer and his family. The early journals of American agriculture contain frequent complaints as to the scarcity of labor and the high wages asked. The author sent out an inquiry to 5,000 employers of farm labor in the summer of 1916, asking a number of questions concerning farm labor. Most of the replies stressed the scarcity of labor, the high wages, the independent spirit of the laborers, and their lack of interest in their work. The Wisconsin State Council of Defense sent out a post card to every farmer in Wisconsin in the spring of 1917 asking, among other things, if more farm labor was needed. There were thousands of replies in the affirmative. A little later a letter was directed to the farmers in several counties who had asked for help, stating that the Council of Defense was now ready to undertake to supply them with labor if they still needed it at a specified rate per month, this rate being that which was then prevailing in the principal labor markets of the state. Few replies were received, and those which came stated that they could not afford to pay such high rates. If an inquiry were to be sent out this spring, the same sort of answers would be received. The scarcity of labor is always relative to the wage rate. There is never enough at the wages which a large group of farmers would like to pay. If wages rise high enough, there will usually be enough of it in the area within a year or two. If the rate which will attract this amount of labor is higher than the farmers in the area can generally afford to pay, this is evidence of the fact that they want more labor than the prevailing level of prices for farm products justifies. The evidence is unmistakable that wages of farm labor keep pretty well in line with farm incomes.

It is doubtful if farm wages ever have been high enough in the United States to warrant any man in consciously taking up farm labor as a life occupation. Except in the Southern states, few married farm laborers are to be found, and there is no significant permanent class of farm laborers. The few married farm laborers that are available are very young, or have just come from the cities, or are older men without enterprise, ambition or thrift. In times past, and still to some extent, the wages paid farm laborers include only a part of the reward, and probably the smaller part of it. The rest of it is the education received in farming, the preparation for becoming a tenant and later an owner operator. Nowadays when far fewer young men are getting ready to be tenants, the farm labor supply is irregular and disorganized. The principal factor in relieving the situation is restoring the confidence of young men in farming as a life occupation so that they will be available in their youth for employment on the larger farms in their neighborhoods and under the management of the most capable farmers.

The second phase of the farm labor problem is a better use of the supply of casual labor. The machinery for this is a properly developed system of public employment offices. The decentralization of manufacturing which is slowly taking place will bring factories and farms more closely together, and will, to a certain extent, provide year-round employment for the casual laborer.

CHAPTER XXI

CREDIT

It is not possible in one chapter of a book on agricultural reform to discuss adequately so large and complex a subject as that of agricultural credit. Nor should it be necessary to treat all phases of it in detail after the excellent chapter on this subject in the report of the Business Men's Commission. The subject has been before the public in this country almost continuously since 1910. One special commission spent a summer in Europe studying its rural-credit systems and made a very lengthy report upon them to Congress. There have been three major credit acts since then, the first one creating the Federal Reserve System, in 1913; the second the Federal Farm Loan System, in 1916; and the third the Intermediate Credit Banks, in 1923.

The reason for all this discussion and legislation is that agricultural credit is of such a nature that ordinary credit agencies do not provide it properly. This is particularly true of credit for agricultural production, but to some extent also true of loans for marketing, covering the operations of transportation, storage, processing and merchandising. Such loans are particularly affected by the fact that several months must ordinarily elapse between the production and the selling; also by the perishability of many farm products. Loans for marketing farm products are ordinarily considered as commercial loans when made by private agencies, but as agricultural loans when made by farmers or their cooperative organizations.

The most important of the special characteristics of production credit for agriculture grow out of its close dependence on natural processes. First of such characteristics is the slow turnover of its current operating capital. Crop loans cannot very well be repaid until the crop has been harvested and sold, nor livestock loans until the animals are fattened and sold. The 90 days which is the usual limit for commercial paper is too short a period for most of such operations.

Associated with this slow turnover is a low ratio of operating to fixed capital. Although only a few months may be needed to mature and harvest the crop, or even only a few weeks between the purchase of dairy feed and receiving the return for the butter fat sold, a large fixed investment is required in land, buildings, machinery, and livestock. It takes 2 or 3 years to raise a dairy cow to a producing age. Where most of the feed for growing livestock is produced on the same farm, a period ranging anywhere up to 2 or 3 years may elapse between the harvesting of the crop and the sale of the livestock or livestock products.

If this whole production process were broken up into stages, the growing of the feed on some farms, the rearing of the young animals on other farms, and the fattening of still others, after the manner so widely developed in the manufacturing field, the producer at each stage would need a loan for only a short period before he disposed of his product to the man in the stage next farther along in the process. Some progress is being made in specialization by stages in agriculture; but it will never attain anything like the extent which it has reached in industry.

The close dependence of agriculture on nature also makes risk an especially important element in provision of credit for it. During the period from 1909 to 1919, the wheat crop, according to Department of Agriculture records, averaged 28.8 per cent under par for the following reasons named in the order of their importance: too little rain, plant diseases, insect pests, too much rain (including floods), hot winds, hail, frosts, storms, animal pests. The total crop damage estimates for other crops for the same period are as follows: corn, 32 per cent; oats, 25 per cent; barley, 29 per cent; flaxseed, 36 per cent; rice, 19 per cent; hay, 20 per cent; potatoes, 30 per cent; tobacco, 20 per cent; cotton, 35 per cent. Since 1919, both wheat and cotton have suffered losses from plant pests and diseases which have probably increased the losses above the foregoing estimates.

If losses occur only to a few farmers in an area, the effects are not serious even to a local bank; but most of the foregoing types of damage are of the sort that cover a whole community. Oftentimes they cover a section of the country as large as a Federal Reserve Bank district. If the damage affects a considerable fraction of the market supply area, prices will rise enough to offset the losses; but ordinarily not enough of the area is similarly affected, with the result that loans are seriously impaired in some regions.

Equally serious is the risk of declining prices from a large group over a whole producing area. This affects cotton, corn, oats, and potatoes, but ordinarily not wheat, or any product with widely distributed sources of supply. It is especially serious for the minor crops whose production is restricted to small areas and is very easily overdone. No satisfactory form of insurance has been developed against price decline, and as will be pointed out later, the success of any such form of insurance is questionable. The price hazard in the case of livestock is that prices will decline during the period while the livestock is being fattened. If the grower has a supply of feed available and unencumbered, he will, in nearly all cases, get as much for his fattened animals as he paid for them as feeders; but he may get very little pay for his feed.

The provision of credit for agriculture is also greatly affected by the close relation between the family living and the farm business. The family has to be fed and clothed whether or not any payment is made on the loan. The living, the health and education of the family, as well as the farm operations, must be financed out of the income. Where agriculture is especially under eclipse, as in the cotton states, this relationship may be carried to the point of actually supplying the groceries for the family while the crop is being grown. In most areas, loans for production and consumption purposes cannot be kept clearly separated. More important than all of these, the amount of credit which a farm operator can expect to obtain depends very largely upon the financial status of the family. He will frequently not be able to borrow very much money if he is a young man on the lower rungs of the agricultural ladder even though he could use it to very good advantage in his farming operations. The size of his family, its standard of living, its program of education for its children, will all affect his access to credit.

The institution of inheritance also figures in the problem. The settlement of an agricultural estate ordinarily requires the sale of the property or at least the writing of a mortgage against it. In many countries under normal conditions, the new mortgages written when estates are passed on to the next generation have nearly equaled the payments on existing mortgages, so that the total burden of farm-mortgage indebtedness has tended to remain about constant.

Loans to agriculture for working capital are also relatively small, principally because the producing unit is small, but also because, even in the United States, a large part of the production is still for family use. This makes very high costs of administration. Combined with the close tie-up between the farm and the family business, it makes much of the credit to agriculture resemble consumption credit. With small units, also, the rate of saving is slow. This particularly affects the retrieving of mortgages.

Growing out of all the foregoing, agriculture has to depend upon its own credit resources to a larger extent than does industry and trade. It is usually not possible to organize a farm business on a corporate basis and raise most of the money by sale of stocks carrying limited liability. The enterprise must wait to be born until someone has accumulated a considerable part of the necessary working capital and even real-estate capital.

Agriculture in the United States is changing in ways which make the foregoing characteristics less pronounced. It is becoming more commercial and turning out a larger volume of product per unit. But these changes are taking place slowly and have very definite limitations. Farming will always be mostly a small proprietory business with a slow turnover, a high rate of fixed to operating capital, and with unusual hazards.

In the United States, agricultural credit has come to be definitely classified under three heads: short-time credit, ordinarily limited to 6 months; intermediate credit, limited to periods of 9 months to 3 years; and long-term credit, to periods of 5 years or more.

The short-time credit needs are principally for labor, feed, fertilizer, seed, sprays, livestock for feeding purposes, holding crops for market, twine and sacks, boxes, barrels, and other containers. Loans for labor are principally for the harvesting operations; but in some sections for planting also. A certain amount of loans is required to pay monthly wages of regular farm hands during the growing season on farms which do not have a steady income from the dairy herd. Seed loans are important in the case of wheat, potatoes, and truck crops; fertilizer loans in the old cotton states and in the tobacco and trucking areas. Most farmers in these sections could benefit from larger loans for fertilizer. Dairy farmers borrow to buy feed to supplement the sorts grown on the home farm, and also to buy additional cows. Such loans are more important in the market-milk areas than in the regions where dairying is combined with a larger amount of crop farming. In the livestock-fattening areas, feed loans are sometimes made to enable the farmer to piece out a short crop of corn. Not all of the foregoing types of loans are entirely liquidating within a 6-month or even a 9-month period; but it is ordinarily assumed that the farmer will contribute enough else to the product to redeem the loans with a safe margin.

The principal intermediate credit needs are for farm buildings, land improvements, such as clearing, draining and fencing, farm machinery, workstock, breeding stock, milk cows, and orchard and small fruit stock. Many of these, such as for farm buildings, land drainage, or orchard stock, are not liquidating even within the 3-year period of the intermediate type of loan. It is commonly assumed that farmers will be able to repay them out of the regular income of the farm. In practice, many such improvements are financed by regular real-estate mortgages running for 5 years; but many of them are too small to make this arrangement desirable. Also, in practice in the United States, banks freely furnish funds for such purposes on notes on which they grant renewals until the note is all paid. As became evident in the period from 1920 and following, this arrangement may work very badly, producing a large volume of "frozen credits."

In the United States, most farm mortgages are still for 5 or 10 years, but long-term amortization mortgages are coming into increasing use. Also, more large loans are being broken into first and second mortgages at different rates of interest.

European countries have been somewhat readier to recognize the special credit needs of agriculture than has the United States. In Germany, the land credit has been provided by a system of nine Landschaften banks which sell debentures and make amortization loans running from 30 to 75 years. These are cooperative in organization, but with certain public prerogatives. Intermediate credit and short-time credit have been provided cooperatively by small local credit associations known as Raiffeisen banks and Schultze-Delitzsch banks. France has provided for land credit and intermediate credit through a system called the *Credit Foncier* modeled after the Landschaften banks, but being somewhat more public in its nature, like our Federal Farm Loan system, and through a subsidiary of the *Credit Foncier* known as *Credit Agriculture Mutual* which handles the short-term loans.

That agricultural capital is subject to slow turnover and unusual risks was learned very early in the history of banking in this country. One early writer on the subject said that "banks in farming districts are a nuisance." But nothing was done in the way of making special provision for such credit. The National Bank Act prohibited national banks from making real-estate loans, and required $50,000 as the minimum capital in cities under 6,000. In 1900, the minimum was lowered to $25,000. This added considerable to the banking service of rural districts. For the most part, however, state banks or private individuals, and in some sections merchants, provided most of the rural credit. The state banks were usually short of funds just when they were wanted most.

The Federal Reserve System liberalized markedly the sources of credit for agriculture. Member banks were permitted to rediscount 6-month agricultural paper as against only 90 days for commercial paper, and were allowed to make loans on farm real estate within limits and for periods up to 5 years. An amendment in 1923 permitted 9-month agricultural paper to be rediscounted. The Federal Reserve System must be looked upon as a public agency which establishes connections with the commercial banks in rural districts, which are the essential part of our system of agricultural credit. The bank in the city or village in the agricultural district is the American institution which typically supplies the credit needs of our agriculture. The Federal Reserve System is effective and useful so far as agriculture is concerned to the extent that it assists the country banks in performing their agricultural functions. That the Federal Reserve Banks have helped considerably is evident from Table 39 following. The total of short-term and intermediate loans to agriculture is commonly estimated at over $3,000,000,000 a year.

TABLE 39.—AGRICULTURAL REDISCOUNTS OF THE FEDERAL RESERVE BANKS, 1914–1926 *

Year	Bills rediscounted (000 omitted)	
	91 days to 6 months	Over 6 but within 9 months
1914	644	
1915	19,684	
1916	16,818	
1917	29,131	
1918	156,246	
1919	125,285	
1920	351,887	
1921	373,172	
1922	229,989	
1923	182,314	5,449
1924	122,558	16,603
1925	81,963	11,627
1926	90,025	14,483
1927		

* *Annual Report*, Federal Reserve Board, p. 94, 1926.

The Federal Farm Loan System sells bonds and makes first-mortgage loans on farms up to 50 per cent of the value of the land plus 20 per cent of the value of the improvements, the mortgages being amortized over a period not succeeding 40 years and bearing interest not in excess of 6 per cent. These loans are available through 12 Federal Land Banks or a subsidiary system of joint-stock land banks largely private in their constitution but also supervised by the Federal Farm Loan Board. In 1927, these banks had loans outstanding to the amount of $1,825,400,000, of which not quite two-thirds was furnished by the 12 Federal Land Banks. This amount is to be compared with $1,999,000,000 furnished in 1927 by 52 legal-reserve life insurance companies and $1,448,000,000 estimated by the Department of Agriculture as furnished by commercial banks in 1920. The Federal Farm Loan System and the insurance companies together furnish more than 40 per cent of the farm mortgage credit. The rest is furnished by private investors and former owners of farms.

The Intermediate Credit Banks were set up in 1923 as subsidiaries of the 12 Federal Land Banks. They operate on the basis of rediscounting paper from agricultural credit corporations, cattle-loan banks, commercial banks, or by making loans direct to cooperative marketing associations, and secure the necessary funds for such purposes by selling debentures secured by the rediscounts. The agency making the note to the farmer is limited to a 2 per cent margin on agricultural loans and a 2.5 per cent margin on livestock loans. The total credit advances of the intermediate credit banks in 1927 were $142,200,000, of which nearly two thirds was rediscounts. Since these banks were organized, advances have been made to 366 agricultural credit corporations, of which 84 were livestock loan companies. Only 165 of the 27,000 banks in the United States have made use of the Intermediate Credit System.

The foregoing discussion of the agricultural credit system of the United States is not complete without reference to the activity of the War Finance Corporation set up in 1921, which approved up to Jan. 1, 1925, when it began to liquidate, a total of 8,747 advances amounting to $479,000,000, of which only $298,000,000 was actually advanced. The banks received over half of the advances, livestock loan companies about 30 per cent, and cooperatives the remainder. Mention must also be made of the state credit systems set up in Oregon, Wisconsin, and a few other states, which for the most part have functioned to only a very limited extent, and of the farm-mortgage systems set up by North Dakota, South Dakota, and Minnesota, which had loans outstanding in 1927 of $103,000,000. The two Dakota systems have accumulated rather large deficits from delinquent loans. The earnings upon the Minnesota loans will probably be sufficient to cover the losses.

With the foregoing as a foundation, we can now discuss the further needs of the agricultural credit situation. These may be summed up as follows:

1. No more credit machinery is needed; but probably all is needed that we now have, except the state farm mortgage systems, which can be looked upon as having served an emergency need.

2. The present machinery is very far from being properly constructed. It needs careful observation and study and rebuilding in parts. The country banks need most observation of all.

3. The Federal Farm Loan and the Intermediate Credit Banks need to handle more business than at present, particularly the latter. Agriculture needs that the different kinds of loans be more clearly differentiated, and that more of the long- and middle-term loans be handled through these two agencies.

4. All of the existing agencies need to be better managed than at present. Neither the Federal Loan Banks nor the Intermediate Credit Banks can be said to have been effectively managed thus far. The work of supervising the joint-stock land banks has certainly been carelessly done, to use language mildly. The country banks are to be criticized for poor judgment in making loans.

5. The point has been reached where farmers should be able to obtain all three kinds of credit at lower interest rates. The existing agencies should be able to provide the necessary credit at lower rates.

6. The credit system of the country should be prepared for another emergency. It is not sufficient to say that it is ready for any ordinary sort of a situation which is likely to develop. If the nation can afford to appropriate funds to build 14 cruisers, it can certainly afford to put its credit system in shape to function successfully in the next war and postwar situation that develops.

7. It is doubtful if any further emergency credit of the type of the War Finance Corporation or the state farm mortgage systems should be provided. It is conceivable that a federal loan could be floated at low enough interest rates, and mortgages written with sufficient care, so that a very large number of farmers could be helped with 1 or 2 per cent lower interest rates than they are now paying, and land values could be considerably stimulated in consequence. But it is doubtful whether an emergency organization could be set up that would select the loans with sufficient care not to harm agriculture more than it would help it.

Let us see what these statements mean in terms of specific credit agencies and types of loans.

LONG-TERM LOANS

The principal weakness in the situation with respect to long-term loans is that the Federal Farm Loan System is not handling as large a proportion of such loans as it should. In particular, it was not handling anywhere nearly enough of them when the agricultural depression came in 1921. It had not expanded its business fast enough. The reduction of its operations in 1919, 1920, and 1921 while the Act was being tested for its constitutionality proved to be a very serious offense against agriculture. The system could have loaned $500,000,000 during this period in place of $160,000,000, and if even this small amount of additional mortgage debt had been upon an amortization basis, the decline in prices of farm products would have hit a good many farmers with less disastrous effect. The business of the Federal Farm Loan System is expanding at the rate of about $100,000,000 a year. This means that by 1940 it will be handling about $3,000,000,000 of loans, or perhaps one-third of the total. If the fraction could be a half rather than a third, the agriculture of the United States would be in a better position to meet another emergency situation such as the recent one. This additional business would be taken away from private investors and the commercial banks mostly. No doubt, some would also be taken from the insurance companies. There is no reason why these other agencies should not continue to make loans to farmers provided they will adopt the amortization principle more freely—as the insurance companies are now doing—and provided the rates are somewhat lower than at present. Too large a volume of the mortgage debt is on the basis of 5- and 10-year mortgages for the safety of agriculture in any important period of depression. It is argued that a large proportion of the farmers do not want long-term mortgages. They are changing their opinion on this subject very rapidly. Furthermore, there is no reason why the long-term mortgages cannot be handled so that larger payments can be accepted at any time the farmer wants to make them.

The second important improvement needed is a reduction in the rate of interest on good mortgages. This is warranted, in the first place, by the rapid reduction in interest rates and in yields of bonds and stocks which is now taking place. As pointed out in Chap. I, the common stocks of the United States at the end of 1928 were returning only 4.3 per cent on their market value, and the railroad stocks only 4.7 per cent. Liberty Loan bonds were yielding only around 3.5 per cent. The Federal Land Bank bonds were yielding from 4.3 to 4.7 per cent. The Federal Farm Loan System has never sold its bonds under sufficiently favorable terms. There may be good and sufficient reasons for this, but they are not apparent to a casual student of the subject. Whatever may be the truth as to the past, the situation now seems to justify a lowering of the rates.

A serious charge is now being made against the Federal Farm Loan Board that its policy of requiring the 12 banks to charge off the loans on foreclosed farms as complete losses compelled these banks to sell these farms as quickly as possible in order to keep their financial statements from showing losses and that this assisted in demoralizing the land market in many sections. In its last report, which includes 1927 and the first quarter of 1928, the board has abandoned this policy.

Why should one regret the slow expansion of the Federal Farm Loan System, you will ask, when considerable losses have been realized on the loans that were made? The last published report shows over 2,000 more foreclosures. The answer involves the most serious of all the charges against the Federal Farm Loan System; namely, that it has not handled its appraisal problem at all well. Absolutely fundamental to the success of any institution which has for its sole function the loaning of money on farm land is as thorough an understanding as possible of the factors determining the value of land at any given time and in any given area. Such an understanding has not been available principally because the necessary data have not been accumulated or analyzed. The inspectors who made the examinations of the land and recommended the loans are not primarily responsible for this weakness of the system, although some of them made a great many poor recommendations. The real weakness has been that those in charge of the appraisal work have not understood their problem. Scarcely a year ago the Federal Farm Loan System set up in a small way the research department for collecting and analyzing land-value data that was needed 12 years ago. When this research staff has worked out its problems properly, it will have mapped out the agriculture of the United States into many small fairly homogeneous areas, assembled data as to the gross and net incomes of farmers in each of these areas, and established series of index numbers indicating the changes in these. It will have exact information as to the rates at which land is selling and renting in all these areas at all times and will have worked out very carefully the ratios of cash rents to land values in them. It will also have developed a system for determining a safe loan value for each individual farm in any of these areas. It will recognize that the future agricultural developments in any area should figure very largely in such a loan value, and will have worked out in close cooperation with the Bureau of Agricultural Economics the types of farming that are likely to develop in each of these areas.

When such a program of research and current analysis has been developed, in the first place, loans will be made on a basis that will greatly reduce the number of foreclosures; in the second place, it will be safe to amend the Federal Farm Loan Act to permit considerably more than a 50 per cent loan; and, in the third place, loans will be made safely on selected farms in areas where the banks are refusing to make loans now.

All of these three developments are of very great importance to American agriculture. Young men wishing to become owners ought to be able to borrow considerably more than 50 per cent of the value of a farm if the farm is properly appraised, if the farm improvements are properly insured, and if the Federal Farm Loan System has properly studied the trends in agricultural production in the area.

One of the principal opportunities for service to agriculture which the Federal Farm Loan System affords is making loans in the less-favored agricultural areas in which the insurance companies are now refusing to do business. No one wants the Federal Farm Loan System or any other public agency to support ''submarginal'' farming. If no system of agriculture of any kind can be carried on advantageously in an area, then the Federal Farm Loan System should surely make no loans there. But the term ''submarginal'' is frequently misunderstood. Oftentimes, the reason an area is not prospering is not that no agriculture can prosper there, but that the system of agriculture now being attempted there is of the wrong kind, and usually is altogether too intensive. What is needed is a system of farming which will divide the area into considerably larger tracts than now prevail and substitute grazing, woodlots, power machinery cultivation, extensive types of crops, or some combination of these, for the agriculture which is now practiced there. If any farmers in such areas are now operating farms successfully on this basis, or on any other basis which careful study by the Bureau of Agricultural Economics proves to be well founded economically, then it is highly important that such farmers be granted loans, or that any other farmers intending to adopt such a farming system be assisted with loans. Such areas are commonly restrained from making the necessary transition because of the lack of capital.

Let us look the facts squarely in the face for a moment. Here is an agency set up by the federal government with tax exemption on its bonds, with access to sources of funds on nearly the same basis as the federal government itself, with a business spread over the whole United States, with a vast volume so as to provide a thorough spreading of risks, and with unusual opportunity for obtaining the assistance of the coordinate branches of the federal government, which thus far has little more than held its own in competition with life insurance companies and other agencies, and which has reached out its hands to few classes of farm people that did not already have access to similar services from other agencies. It is true that it has been a factor in the lowering of interest rates on farm mortgages in some sections and perhaps in general. The average farm mortgage rate in 1920 was only 0.2 per cent higher than the average yield of high-grade railroad bonds, as contrasted with 2.4 per cent higher away back in 1890. But other factors than the Federal Farm Loan System have contributed largely to this improvement. Surely this record is one which does not bespeak a high degree of efficiency in administration.

Agriculture also needs that agencies be developed for handling the growing volume of second-mortgage business. The Federal Farm Loan System should take a hand in this, possibly in a subsidiary department. The wide spreading of risks made possible if a federal system handles it will allow much lower interest rates than if the same business is handled by a large number of small private agencies. Splitting the larger mortgages into firsts and seconds will make for appreciably lower rates on the first-mortgage risks.

In conclusion, it is also proper to ask whether we should not begin to look forward to the time when the business of the joint-stock land banks is gradually absorbed by the 12 Federal Land Banks. These subsidiary banks have rendered an important service in that they have added considerably to the volume of federal farm loans, but their record thus far does not warrant arguing for their long continuance.

MIDDLE-TERM CREDIT

The great need in the field of middle-term credit is that the differentiation between this and short-term credit which is recognized in the Agricultural Credit Act of 1923 be carried into practice. The handling of such loans by renewing 6- or 9-month paper of commercial banks creates a dangerous situation. Loaning on this basis is likely to be especially large in a period of inflation and to precipitate bank failures. There is need for preparedness here as in other spheres of public life. By no means should all such business be taken away from the country banks; but their volume of it should be kept within bounds.

The Intermediate Credit Banks should be able to acquire this sort of business. They can obtain money at low rates of interest by the sale of debentures, probably at as low rates as the Federal Land Banks. They ought to be able to pass the benefits of these low rates back to agriculture and reduce the rates on middle-term loans much below those now prevailing. As is commonly known, farmers in many places pay 10 and even 12 per cent—some of these places not far west of the Mississippi River. In the South, rates in effect as high as 20 per cent or more are commonly paid. The Intermediate Credit Banks are not being administered in such a way at present as to produce very much of an impression on these high rates. Not only has there been a lack of aggressiveness in developing the intermediate credit business of the system but also the deliberate policy of not taking business away from the commercial banks. All this must be changed. Congress should take active measures, if need be, to see that such a policy is changed.

Apparently, there is a difficult problem involved in developing agencies that will establish contacts with farmers and get the benefits of the system directly to them. The commercial banks hinder rather than help at present. They can take any margin that the community will stand when they have their paper rediscounted by the Federal Reserve System, but are limited to a 2 or 2.5 per cent margin if they do business with the Intermediate Credit Banks. One suggestion is that this restriction on margins be removed. It is argued that competition between commercial banks will force them to pass on to the borrowers the benefits of the low rates at which the debentures are sold. But competition is not working sufficiently well among country banks to justify such an experiment. Thus far the principal effect of it has been to give us too many banks loaning money at rates necessarily high if all are to make a living.

Another proposal is to restrict the Federal Reserve Banks to 6-month paper again, or to prohibit their taking paper based on loans for the purchase of farm machinery, land improvements, dairy cows, and orchard and nursery stock, since it cannot be interpreted as self-liquidating by any stretching of the definition of this term. The Federal Reserve System adopted very liberal policies in regard to paper of this sort in the early days before the Intermediate Credit Banks were established. The extending of the term of agricultural paper from 6 to 9 months as part of the Agricultural Credit Act of 1923 was intended to provide an alternative source of middle-term credit for agriculture. Now that a system has been set up especially for handling such credit, it is proposed that the Federal Reserve System be kept out of this field, and that legislation be passed by Congress securing such a result. If middle-term loans require special treatment, and if it has been worth while to set up a special agency adapted to providing such treatment, then it is a highly sensible procedure to pass the necessary legislation to provide a place for it, and a highly unreasonable procedure to let other agencies rob it of its proper place in the national system of credit.

The agricultural credit corporation is the agency favored by most students of the subject for bringing Intermediate Credit Banks into contact with farmer borrowers. The report of the Business Men's Commission takes a very pronounced stand in favor of increasing the number of such corporations. Apparently, the Intermediate Credit Banks have made little effort to push such a development. The early credit corporations were mostly set up by commercial banks for the purpose of shifting to them as subsidiaries the doubtful paper in their hands. The first job of the administration, indeed, was to make it clear that such corporations were not emergency institutions and could accept only sound loans. But developments since then have been such as to warrant a more positive policy. Cooperative associations have organized credit corporations that have made loans for purposes of crop production which have proved of great assistance in several states. These have not all been successful, but neither have all of them been well managed. One subsidiary agricultural credit corporation loaned over $600,000 last year with a loss of only $500. A number of livestock commission associations in the Middle West have successfully financed sales of feeder cattle through such corporations. Private commission companies have also organized them in a number of cases.

The proper organization and business practices for such corporations are not very well understood at present. Experience thus far has indicated that small credit corporations with the minimum capitalization of $10,000 are not likely to prove successful. This volume of business does not maintain the kind of a staff required for efficient operation. Probably $50,000 should be about the minimum capitalization. With modern means of communication and transportation a corporation of this size would be within reach of the farmers in most sections. Such credit corporations can render the largest service in the South where credit is so expensive at present and commercial banks are not in the position to provide much of what is needed on a reasonable basis.

The Intermediate Credit Banks should make a careful study of the factors and business practices making for success in the organization and management of such credit corporations and then should provide an extension service for assisting such organizations with their organization and management problems.

Somewhat the same thing can be said with respect to their business with the cooperative marketing associations. If they are not so organized and conducted at present as to enable Intermediate Credit Banks to make loans to them without too much examination and red tape, it is time that all the facts with respect to this were brought out and the cooperatives informed as to what is necessary to enable them to make expeditious use of the Intermediate Credit System.

COMMERCIAL BANKS

Only a brief summary of our recent experience with commercial banks is needed to make it clear that they are the weakest part of our agricultural credit system at present. During the period from 1920 to 1927, a total of 3,390 banks failed, of which 557 were national banks. This is over twice as many banks as failed during the preceding 30 years. The failures were mostly in agricultural areas. More than half of the suspensions during 1924 to 1925 were in the six states of Minnesota, Iowa, Missouri, North Dakota, South Dakota, and Oklahoma, and nearly all of the rest were in nine other states, North Carolina, South Carolina, Georgia, Texas, Nebraska, Montana, Wyoming, and New Mexico. These failures have continued year after year. There were 358 in 1921 and 397 the year following. The number then fell to 274 in 1923 but rose to 915 in 1924. The next 2 years showed a partial recession, but in 1927 failures jumped to 831. It is needless to refer to the paralyzing effect of bank failures on the agriculture of the community. At this particular time it has caused many farms to be thrown upon the market and has further depressed land prices.

Following is the list of the proposals for handling the bank problem which have most to recommend them:

1. The requirement of a higher capitalization, of $25,000 or possibly even $50,000. C. B. Hazelwood, Vice-president of the American Bankers Association, is quoted as saying as follows: ''If a ten-to-one ratio between the total demand liabilities and the capital and surplus may be accepted as conservative, it is obvious that a bank capitalized at $10,000 and with $100,000 in deposits cannot pay a profit nor show progress regardless of interest rates, even if it were operated by one man. Face to face and by correspondence, I have discussed this matter with many country bankers, and I find that almost all of them favor a minimum of $25,000 capital, while many of the more conservative incline to $50,000.[1]

It is significant that in six of the states having over half of the bank failures in 1924 and 1925 the number of banks varied from 1 to every 800 to 1 to every 960 persons as compared with 1 bank with 7,300 persons in New England. The banks failing in the United States during 1924 and 1925 have an average capitalization of $38,000 as compared with $100,000 for all banks. In any one state, the average capitalization of the suspended banks may be little smaller than of the other banks. At least this was true in the western states and almost true in Minnesota. This indicates that it is the average capitalization of banks in a territory rather than that of the individual bank which makes for weakness. A small bank will be reasonably safe in an area where most of the banks are large, but no bank is very safe in the region where most of the banks are small.

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[1] Report of the Business Men's Commission on Agriculture, p. 238.

It is urged that requiring this larger capitalization will reduce the accessibility of farmers to banking service and tend to restore agriculture to conditions that prevailed in the days before banks were brought within reach. A number of things have happened to destroy the value of this argument. In the first place, the decline in the value of money has made $25,000 represent little more than $10,000 in 1900. In the second place, improved transportation and communication have made it possible for farmers to reach banks much farther away. Third, the present low capitalization has had for its principal effect not bringing banks nearer to the farmers, but increasing the number of banks in the same village or city. Raising the capitalization to $50,000 for cities of 2,000 to 10,000 will have the effect of concentrating the business in one or two banks in place of the three to five that are commonly to be found there.

Legislation to facilitate and encourage the consolidation of the banks in country towns should be very carefully considered as a possibility.

2. The business of country banks should be more largely restricted to short-time loans. This has already been discussed in connection with the Federal-Reserve and Intermediate Credit bank systems. This will leave less business for the commercial banks, but that which is left will be much safer business for them. Necessarily, there will be room for fewer banks in a town after such changes take place. Remember that it was not recommended that country banks make no real estate or middle-term credit loans. What is here suggested is that the ratio of

such loans to short-term loans be greatly reduced in many banks in rural districts—more than cut in two in many cases.

3. It is urged that state banking departments control the number of banks by exercising greater discretion in granting new charters, that state banking laws be made more rigorous and inspections more thorough, and that state banking departments be supported adequately so that they can secure competent assistance. A comparative study of the administration of state banking acts makes it abundantly clear that many of them are lax in the first place and not well administered in the second.

4. It is recommended that educational agencies in the states undertake careful research studies into factors making for success in the organization and management of country banks; that state banking departments and bankers' associations make similar studies; and that adequate extension service be developed to make the results of such studies available to country banks.

5. While the people of the United States have reason to fear, under the financial conditions which prevail in this country, the general development of a branch banking system, it is possible that a certain amount of ''group'' banking activity, or possibly restricted branch banking, may offer some opportunities for strengthening country banks and improving the quality of their services. It must also be borne in mind that a probable substitute for branch banking is chain banking, which has as many objectionable features as the former, and which will be very difficult to prevent by legislation.

6. The report of the Business Men's Commission urges the organization of ''country bank associations'' whose object would be to encourage and develop sound banking and increase the confidence of the public in banking institutions through cooperation of the banks for the greater safety of all. Such associations might employ the services of a special examiner who would also be a general financial adviser and who might be responsible to an executive committee representing the banks in the association.

CHAPTER XXII

PUBLIC ENTERPRISE AND TAXATION

We were told in the opening chapter that taxes paid by farmers in 1927 were 158 per cent above their prewar levels. In dollars in 1927, they were 76 per cent above their prewar levels. At 1927 prices, 67 per cent more farm products at farm prices were required to pay the 1927 farm tax bill than the 1910 to 1914 farm tax bill. The index of farm taxes has risen 51 points since 1921 and 9 points even since 1924. These larger tax bills are one of the principal reasons why farm families need larger incomes now than in the prewar period. They have also figured in an important way in the decline in land values. Studies have been made of the relation between real-estate taxes and farm incomes for groups of farms in several states since 1923. In a Michigan area in 1923, the taxes paid equaled 67 per cent of the net income from the land (before deducting taxes). The taxes on a group of 1,018 Michigan farms in 1925 were 54 per cent of the net land income. Comparable figures for a Colorado group of farms were 38 per cent in 1923 and 33 per cent in 1925. A study made in Missouri in 1923 showed taxes taking 20 per cent of the net rent before deducting taxes. The changes which have occurred in the ratio of taxes to net rent of farm land may be illustrated by the following series for Iowa:[1]

Year	Net rent per acre	Taxes per acre	Percentage taxes of net rent
1913	4.18	0.57	13.7
1914	4.58	0.66	14.4
1915	4.37	0.70	15.9
1918	5.28	0.85	16.0
1921	7.11	1.53	21.6
1922	5.15	1.70	32.9
1923	4.24	1.53	36.1
1926	4.90	1.36	27.7
1927	4.54	1.30	28.7

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[1] Iowa State College Extension Bull. 150. BRINDLEY, JOHN E., and GRACE S. M. ZORBAUGH, "The Tax System of Iowa," Table 26, p. 55.

Taking the country as a whole, the taxes per acre have risen slightly instead of declining, as in Iowa, but farm incomes have risen more than taxes, with the result that the ratio of taxes to net rent has in general declined, as in Iowa.

The foregoing summary of the present situation is entirely in terms of taxes, whereas the problem which we have to handle includes the whole matter of the economy of public enterprise and various forms of governmental activity discussed in Chap. II. One set of questions relates to what activities shall be handled or undertaken by governmental agencies. Another set of questions assumes certain activities, such as roads and schools, as being public in their nature and undertakes to determine the economy of their organization and management. Under this head, answers must be found to such questions as whether or not a road should be improved or a bridge built? whether the present is the right time to undertake such a venture? what type of a bridge to build? how to organize and direct its construction? and how to finance its construction? Specialists in public finance and taxation have given most attention not to such matters as the foregoing, but to methods of raising the funds by taxation with which to finance them. Surely, the raising of the funds is important. Surely, there is a relation between the nature of the public enterprises and the methods of their support. But the major consideration is the enterprise itself, its purposes, organization and administration. The term ''public finance'' as distinguished from taxation is commonly assumed to include problems relating to the objects of public expenditures, but it does not suggest their true nature nor direct attention to their most important aspects, which essentially relate to what may be called ''public production'' or ''enterprise'' as distinguished from private enterprise.

The foregoing can be made clear if we assume for a moment that the bridge above mentioned was needed on a large private farm instead of upon a public highway. The proprietor of this farm would balance the prospective increase in gross income produced by this bridge through a fuller utilization of the land beyond the river against the prospective new budget of expenses, which would include a somewhat reduced allowance for time and expense in hauling, but additional items for interest, depreciation, and upkeep on the bridge. If the estimated gross receipts were increased more than the estimated expense budget, the proprietor of the farm would probably decide to build the bridge. If a county or township were confronted by the same problem, it ought to figure in the same way, estimating as closely as possible, on the one hand, what the bridge would add to the gross incomes of the people in the county or township, and, on the other, what it would add to their expenditures. Such estimates are not very easy to make in the case of public enterprises, but they can and should be made. They have to take account of travel for pleasure as well as for production purposes. Bridges and roads are frequently constructed mostly for the purpose of diverting traffic from one city to another without any important real saving for the people who use the highway. Such wastes of production should be checked as much as possible.

Although it may be good economy to build a bridge, the time may not be appropriate for it. The financial condition of the taxpayers may be such that they should not undertake the venture now. The money needed for the bridge may be worth more to a majority of the farmers in the township for other purposes —for readjusting their farming from a cash crop to a livestock basis, for purchasing power machinery and operating larger units on a more extensive basis, for making payments on mortgages, or for sending children away to school. A county or a township must also consider the state of its own treasury and its existing load of bonded debt.

It is hardly necessary to state that the governmental unit has the same sorts of problems as to type of bridge, letting the contract, supervising the construction, and the like, which a private enterpriser would have.

The analogy cannot be carried farther without calling attention to certain important differences between public and private enterprise. In the first place, many expenditures by governmental units are for purposes which are generally called ''consumptive,'' as distinguished from ''productive,'' such as for education, health and sanitation, and recreation. Expenditures for roads, except back from the main highways, are as largely for pleasure as for business purposes. If a projected enterprise relates to production economy, the criterion of its value is whether or not it increases income; if it relates to consumption economy, the criterion of its success is whether or not it spends net income wisely. It is just as important to analyze the latter as the former. Income is earned largely for the purpose of spending it on one form of living or another. A program of wise utilization of income must be developed side by side with the program for increasing income. The citizens of every community have considerable income to spend for consumptive purposes which are now commonly recognized as lending themselves to public control and administration. Governmental units must, therefore, give very careful attention to the economy of consumption.

The other important difference is that the families in a taxing unit are not all in the same financial condition. Some need to spend as largely as possible for the purpose of increasing their production so as to have more income to spend, and others are in the position of having income which they could well afford to have devoted liberally to public consumption uses. The principle is sometimes advanced that no money should be taken from individuals and used for public purposes unless the individuals would find it in their own interest to make the same use of it. If this rule of action were strictly followed, no public activities of any kind would be possible. There would always be someone who could use his money himself to better advantage, or would prefer that the government use it in some other way. Under a democratic form of government, the majority rules in such questions. But the interests of an important minority should not be ignored in most decisions of this kind. This is especially true if that minority consists of people in poor circumstances who need their incomes for private purposes. The alternative commonly adopted to meet this latter situation is a system for taxation which collects a considerable part of the income on the basis of ability to pay rather than of benefit received. Only in this way can public improvements much desired by the more well to do be financed without undue hardship on the poor.

Our most important need in the field of public enterprise and taxation is for greater wisdom in deciding upon questions as to when and how to spend public money for various purposes. It is true that such matters are frequently voted upon in special referendums, but even in such cases the voters do not have the clear understanding of the issues which is needed. Most of such decisions are made by representatives of the people on township boards, county boards, state legislatures, and the like, who are chosen for reasons little related to the problem of spending the public money. Thus the state legislature decides what the appropriation of the state university will be, and Congress, in theory, decides what means will be available for providing a better information service for farmers.

In one of our western states not many years ago a candidate for governor made reducing the taxes, abolishing the public service commissions, and hamstringing the university because of its collaboration with the commissions, the principal planks in his program for election. It was easy to show that all the objectionable public service commissions combined were adding less than 30 cents a year to the taxes of the average family, and that any reduction in the university budget within reason would save them even less; but there was no way to get this information into the hands of the voters. Let us suppose that each voter in a typical county could have been asked whether he preferred to have his taxes reduced 3 cents and the railroad commission abolished, or to keep the railroad commission in operation—what would have been his answer? What would have been his answer if a similar question could have been put to him with respect to specific activities of the state university?

Obviously, it will never be possible to work out a system which will obtain the answers that might be obtained in the foregoing way. If it were possible, it would still be necessary to devise a system for informing the citizens truthfully as to the issues involved. One cannot be certain, moreover, that majority rule might not prevent some very important public activities which the conceivably more far-sighted representatives would approve.

There is not the slightest doubt that an increasing volume of public expenditures will be authorized as the years go by. The standard of living is being raised in both city and country, and the things that governments provide—schools, roads, sanitation, various forms of public service rendered by commissions and bureaus, figure very largely in this higher standard of living. Constantly, more of the things which make up a scale of living are of the sort that public agencies can supply to the best advantage. This is as true of changes in production as of changes in consumption. The greatest needs of agriculture at present are for services to assist individuals in adjusting themselves to changes in economic conditions and in keeping production and marketing orderly; and these are exactly the services that public agencies can best provide. We can expect complaints about high taxes. There will always be a minority consisting of those who need their little income more for other purposes, plus those who are not themselves benefited by the improved public services and are disposed to be selfish in the matter. But the preponderant interest will nearly always be toward increased expenditures, not only absolutely, but relative to incomes. Although we declaim against large tax bills, when we stop to weigh what we get in return for what we spend on public services, against what get in return for other money spent, or balance what we pay governments to provide such services against what it would cost us to provide them ourselves, we find ourselves in the majority of cases voting for the larger public expenditures. If we vote the other way, abolishing some form of public service, it is only a year or two before we vote it back again. Thus public expenditures move on upward, with little recessions here and there and now and then, followed presently by ascents to levels not before reached.

A familiar incident in such a process is having some political leader seize a strategic moment to make tax reduction the issue in his campaign and ride into office upon it. By vetoing appropriations for new construction and repairs, which often are overdue; by checking promotions and salary increases in the public service, and reducing the amount of quality of public service in various ways, our hero makes some kind of a showing of reduced expenditures, or at least of no further increases. This game can be played for only a few years at a time. The administration that follows finds itself confronted with arrears which must be met with higher taxes.

Nothing which has been said must be interpreted to mean that no economies in public administration are possible. The contrary is pronouncedly true. Much can be done in introducing economy and efficiency into the organization and management of public enterprises. Comparative studies of costs of education, highways, police protection, fire protection, and all the various forms of public service will show large differences in unit costs and quality of service. But there is ordinarily little relation between true economies in such administration, which consist of securing more and better service in return for money expended, and the temporary reductions in appropriations made by those who ride into office after campaigns for tax reduction. The reforms in public administration which have resulted in true economies have more often been made by constructive forward-looking leaders in periods when tax reduction has not been an important issue.

In general, the public service suffers more from niggardliness in salaries than from any other cause. There is a principle somewhat akin to the law of diminishing returns that applies to the choice of men for various grades of tasks. For any given task there is some grade and type of worker who will give the largest return for the money spent upon him. A poorer grade of servant will do the job, but only indifferently well, and part of the salary paid him will be, in effect, wasted. If too good a man is employed, a loss will result because he can accomplish more at a task requiring more unusual ability. Altogether too many of the jobs in the public service are manned by persons of too low grade for economical service. It is commonly said that workers in public service are greatly underpaid. This may be true. But a more appropriate statement is that governments are not commonly employing as good servants as would be most economical. It would be a mistake suddenly to raise salaries in the public service, since the principal effect of it would be merely to add to the salaries of many persons now getting more than they earn, according to true standards of efficiency; but if new salary schedules could be adopted and the abler men promoted to the top of each rank, and new positions also could be created at the top and abler men brought in from the outside, great improvement could be made within a few years, and before very long the whole service would be upon a new plane of economy. Yet just such a reform as is here outlined is what is least to be expected from a public official who has been elected to office in a campaign for tax reduction.

The Civil Service system has proved to be of great advantage to the public service in United States and should be further extended; but it has fallen far short of its high promise. In England, where the term "civil service" first came into use, a goodly share of the outstanding men in the university classes each year have been drawn into the government service. These young men have been promoted from grade to grade until today the best of them are at the very top. A few bureaus in the United States public service are showing signs of developing in this direction; but only a few. To state the reasons in full for this difference, would take us far beyond the purposes of this book; but it is germane to the subject in hand to indicate a few of them. The low schedule of salaries is one factor. More serious is the failure of our public service to provide for continuing promotion to the key positions in the various branches of the service. Remedying this calls for putting still more of the higher-salaried positions under civil service and creating a few more of the higher-salaried positions. Another important factor is the type of requirement that has been set up in the Civil Service examinations. Altogether too much emphasis has been placed upon mere experience and not enough on training and ability. If the emphasis had been placed on these latter, and young men had been drawn into the service and promoted as rapidly as necessary to retain their services until they reached the high-salaried positions at the top, we would now have a much higher order of ability in the public service. Instead, our public service has acquired a too large proportion of men who have obtained experience on too many jobs, and have presently reached the point where they are willing to take a position at the salary levels prevailing in the government service.

Some years ago, one of those persons who style themselves "applied psychologists" held a series of meetings in our national capital. Now the secret of the success of one of these performers is to attract as many persons as possible from among those who have not been successful in life and convince them that they have natural talents but have not yet mastered themselves or have not yet found their right niche in the scheme of things. In no city, according to the testimony of this particular performer, was she more enthusiastically received than in Washington, and the most numerous group in her clientele consisted of persons in the public service.

In the discussion of the economy of public enterprise which has appeared, only one note of any importance has been sounded, and that is that nearly all of the public expenditures are for local undertakings, for which towns and counties are altogether responsible; and that, therefore, if any reduction in these expenditures is to be accomplished it must be brought about through inducing the taxpayers in these jurisdictions to authorize fewer public benefits. While this position is valid, it can easily be overstated. It is not difficult to find townships or whole counties that have overreached themselves in their programs of public improvements in the last 10 years. It is as serious for a township to overexpand its road building and other improvement program as it is for an individual farmer to do it. It does not hurt any one farmer as much, but it hurts the aggregate of them much more. In particular, it imposes a severe burden upon those who are close to the precipice of financial catastrophe.

The weakness of this analysis of the problem is that in itself it offers no means of remedying the evil. There is need for a very extensive program of comparative studies of county and township expenditures with a view to determining the principles and rules of guidance in the making of public improvements. Left to themselves, local governmental units will continue to blunder along as in the past.

TAXATION

So far as the problem of raising the public revenues is concerned, it ought not be necessary to discuss it in detail as it relates to agriculture. Instead, let us summarize the conclusions that can properly be derived from the various analyses that have been published, including particularly that of the report of the Business Men's Commission on Agriculture (Chap. IX).

1. For the increasing volume of public expenditures which is likely to be voted as above indicated, the sources of public revenue in the United States are entirely ample. One needs only to compare the ratio of taxes to wealth and income in the United States to that in England, Germany, France, and other leading nations in order to realize the utter truth of such a conclusion. To be sure, those who are contributing liberally from their incomes in the form of income and corporation taxes in the United States look upon these contributions as exorbitant. They are, relative to the prewar situation; but not otherwise. The major problem in taxation, therefore, is to find some way of obtaining the use of these funds for public purposes.

2. The methods of taxation used in most of the states at present are not adequate or satisfactory. Their principal defect is that they depend too largely upon the general property tax. This makes so heavy a burden upon real estate that the point is soon reached beyond which obtaining further revenues from this source is confiscatory in effect and a drag upon the improvement of private property and, in particular, a serious discouragement to home ownership.

3. A diversified system of taxes which makes the levies on several different bases distributes the taxation burden more equally and makes it easier to secure adequate revenues.

4. In any program for diversifying sources of income at present, income taxes must be our principal hope. Farm people do not favor income taxes to the extent that they should. They have not yet been taught to understand how they will be affected by them. Even the farm press becomes selfish when the income-tax issue is raised. It would appear that the agricultural experiment stations and extension divisions should undertake a broad national program of research developing the facts as to the bearing of a system of income taxes upon agriculture and then set about teaching the results to farm people. The Department of Agriculture should take the lead in organizing such a program.

5. Many forms of public expenditure require distribution over a much larger territory than the taxing units now supporting them. This is already recognized in the program of support for the building of national highways and various forms of state aid to local school districts. The principle should be extended still farther. So far as roads are concerned, no doubt a goodly share of the expenses of upkeep of the cross-roads used almost altogether by farmers should continue to be a burden upon farm real estate, but the highways connecting cities and villages or used by townspeople to reach lakes and places of amusement should be built and maintained almost altogether out of funds collected from other sources than the general property tax.[2] Rural schools must have more outside support than

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[2] At this point attention should be called to the following significant statements from Dr. McKay's report mentioned in Chap. XIX:

Traffic on the rural highway system is predominantly that of city-owned passenger cars and motor trucks. On the New Hampshire State Highway they are now receiving if they are going to be suitable places for training a large part of the future citizens of our cities as well as of our farming districts. Of almost equal importance is providing better health facilities for rural people. At present, many rural districts are altogether too far removed from good doctors, dentists, and hospitals.

6. Any program of improvement of conditions in rural districts must be tied up very carefully with land-utilization pro-

System, 6.1 per cent of the use consisted of farm-owned vehicles, whose average trip was 13 miles; in Ohio 12.4 per cent of the traffic, and the average trip was 12 miles; in Pennsylvania 7.1 per cent, and the average trip was 26 miles; and in Vermont, 10.1 per cent, while the average trip was 12 miles.

Of the 23,500,000 motor vehicles registered in the United States in 1927, 5,000,000 were farm-owned vehicles. Although appromixately one-fifth of the motor vehicles are farm-owned vehicles, they are distributed over a considerably larger area than city-owned vehicles and their use of the highway is less concentrated.

Manufactured products constitute the largest percentage of goods hauled on rural highways. Products of agriculture and animals comprised 16.4 per cent of the total net tonnage hauled on rural highways in Connecticut, 18.7 per cent in Cook County, 15.0 per cent in Maine, 14.6 per cent in New Hampshire, 21.9 per cent in Ohio, 19.9 per cent in Pennsylvania, and 17.1 per cent in Vermont.

Farm trucks comprised only 7.5 per cent of the total loaded motor trucks on the highway system of Cook County, Illinois, 11.9 per cent in Maine, 5.5 per cent in New Hampshire, 12.7 per cent in Ohio, 7.8 per cent in Pennsylvania, and 11.1 per cent in Vermont.

The improvement of established roads serving a farm territory has little influence on the value of rural land, compared with the major factors which establish the value of agricultural land. The approximate differentials in farm value between road types resulting from highway improvement in a Wisconsin dairy county is less than $5 per acre for a concrete surface over a gravel surface, and less than $3 per acre for a gravel surface over an earth road. Similar relationships were found in several Iowa counties. This small increment of value to rural farm land resulting from improved highways, if taxed to finance part of the cost of a highway improvement, requires the future replacement of the highway improvement from other sources of income. For example, assume that a paved surface adds $4 of value per acre to farm land within a one-mile zone on each side of the road. Assume further that this increase in value is absorbed by taxation to finance part of the total cost of the road improvement. Fifteen or twenty years later the road is worn out and must be replaced. The financing of any part of the replacement costs should not be assessed against the same farm land, since the replaced surface adds no new value to the land.

grams. If the area is one which in the long run will be unable to support some system of agriculture which will yield its people a good living and maintain roads, schools, telephones, and other public institutions on the same basis as other farming districts, then any distribution of public funds to make up present deficiencies in such districts must be interpreted as temporary public aid and should be planned on that basis. The cost of providing roads and schools for farm families in a region of large farms and extensive agriculture is much greater in proportion to the farm income per acre and must be taken account of fully in determining the probable future of any system of farming in the region.

7. A going forestry enterprise with trees in all stages of growth and regular cuttings each year can stand taxation on the same basis as any other type of enterprise; but the forests of the United States are not in this condition at the present time, nor are they likely to be for another 100 years. Instead we have 138,000,000,000 acres of virgin timber which ought to be a source of public revenue on the same basis as a coal mine, and then a much larger acreage of land upon which second-growth is now developing, in so far as it is able to escape forest fires and other hazards. The tracts of virgin timber should not be taxed very heavily because this will cause them to be logged too soon. If the cutover lands are taxed at the rate generally prevailing for such lands, private capital is likely to find the burden of ownership and forest protection and development too great. What is wanted for these lands is some system of taxation which will defer payments until the crop is about ready to be harvested. But such a system of taxation would mean that such property would yield no public revenue for the present local governments. It is generally agreed that the best system is one which will impose rather small taxes on lands being restocked with timber, and depend upon a rather large yield tax at a later period. If the local governments cannot obtain sufficient revenue at present from such a system of taxes, then the state or the nation must take a hand either by making up some of the local deficiencies in revenue resulting, or by purchasing the land and providing the necessary roads and fire protection for the forest areas. Clearly, the former arrangement is to be preferred in many cases.

8. As a corollary to the wider distribution of public expenditures and sources of public income, any concentration of wealth in one place, such as in a mine or in a large city, should be a source of income upon which counties, states, and even the nation should be able to draw. The iron mines of northern Minnesota should not be interpreted as sources of revenue only to the counties in which they are located. The income of the city of New York is drawn from the whole nation and is properly taxable in support of a national program of road building.

9. A good system of taxes should collect something from every citizen so as to keep him interested in the problem of public expenditures. A simple head tax is better than none, but a more desirable tax is one which will be smaller or larger according to the volume of public expenditures.

10. Gasoline taxes, in both theory and practice, have proved to be the most satisfactory source of revenue for road building and maintenance; but there are some advantages in sizable registration taxes and in a levy upon automobile manufacturers. The adding of $100 to the price of every automobile at time of purchase would provide a fund that the federal government could use in the building of interstate highways, and would be good economy in the sense that each person buying a car would purchase that much of a share in the highways upon which he was going to drive it. In theory, gasoline taxes should be used only for the maintenance of highways and new construction ought to be financed out of capital investments such as this $100 tax would be. There can be no doubt that decisions whether or not to purchase automobiles would be more intelligently made if motor-car taxation were on this basis.

11. The administration of local taxation could be improved greatly. Recent studies such as in Illinois have shown that assessments are very unequal and that equalization is very inadequately handled in many states. The line of progress in better tax administration is the centralization of more authority in state tax commissions. Where such centralization has occurred, tax administration has been very greatly improved.

12. There has been much discussion to the effect that the rural districts are bearing an unfair share of the tax burden. Such analysis is of some pertinence from a short-time point of view. If the farmers' ratio of taxes to income increases rela-

tive to that of urban residents, they and all of their generation will feel the effects; but so far as demonstrating the absolute burden of support of public enterprise borne by rural people in contrast with that borne by urban people, such figures are of little consequence, for the reason that nearly all taxes are to some degree shifted and some are very largely shifted. The tenant pays the tax on the house in which he lives when he pays his rent. It is probable that the farmers contribute a considerable portion of the taxes on railroads when they pay the freight on their grain and livestock.

In the long run, wages and incomes get adjusted to taxes in such a way that the receivers of them support public enterprise according to the fundamental conditions of supply and demand for the services which these people have to offer to society, and a different system of taxation would not change the essential situation. But certain sorts of taxes are shifted very slowly. The only way that income taxes can be shifted is by reducing the supply of persons performing the services for which these incomes are the rewards. It is possible to cite cases where high income or corporation taxes have kept capital out of fields of production and raised the prices of the product or service to the consumer. In the case of railroads, the higher taxes that began to be levied about 20 years ago have indeed been passed on to the users of railway service in higher rates. But this does not prove that the general level of prices paid by consumers is higher because of the progressive income taxes which are now levied. To demonstrate that, it will be necessary to show that high income taxes make our well-to-do classes and our entrepreneurs less interested in making money and starting new enterprises or more careless about profits; or that it induces them to send capital out of the country, or perhaps to spend their income more freely on current consumption. It is very doubtful if any of these can be proved to have happened.

Even in the short run, enough taxes are shifted so that determining the actual burden borne by various social classes is impossible. Equalizing the tax burden in the sense of making direct tax payments equal or proportional to income is, therefore, almost a useless ambition. The two most important criteria of a good tax are its effect on society and its collectibility.

CONCLUSION

The task which we set for ourselves is done. By no means have all aspects of the problem of agricultural reform been brought into the picture. Nor has any aspect of it been presented in much detail. But within the limits which were set, the task has come to an end. Before pens are finally laid aside, let us take a few moments to pass in quick review over the picture, point out its features of greatest significance and set them in proper perspective.

THE SETTING

In spite of many opinions to the contrary, the agricultural people of the United States are not sharing as they should in the prosperity of the nation, are not sharing as nearly equally in it now as in the period just before the World War. The real incomes of farm people are a little higher now than in 1910 to 1914; but they are not so adequate to meet the needs of the prevailing national scale of living. In consequence, the capitalization of agriculture is still declining, whereas that of urban industry has risen almost steadily since 1921.

So far as the "depression" itself is concerned—the inflation-deflation episode—agriculture climbed out of the depths in 1922 and 1923 along with urban industry. But since then, agricultural incomes have remained at virtually the same level. The year 1925 was better than has been any year since.

The explanation of this has much less to do with inflation and deflation than with a number of fundamental changes that have occurred in the economic environment of agriculture. Most significant of these changes is the new trend toward larger agricultural production—essentially a world-wide movement—which set in probably before 1910. The opening of new areas on the frontier has played a smaller part in this expansion than have technical improvements in agricultural production, notably the introduction of gasoline power. The other major influence is the rising scale of living in the United States especially. This has been supported by the higher wages and profits of urban enterprise. The demand of the city populations for food is still increasing; but not so fast as their incomes. A larger proportion of today's incomes is spent for goods and services produced in the city.

Such developments as these call for fewer people on farms and more in the cities. And the population is shifting accordingly, at what at first seems like an amazing rate. But a large part of the apparent increase in the rate of urbanization merely reflects the passing of the frontier. We no longer have large rural population increases on the frontier to offset the decreases behind the frontier that have been going on for many decades. The present shift is not yet rapid enough to equalize incomes in agricultural and urban enterprise.

If no important reform measures are instituted in the next decade or two, farm incomes will improve a little, mostly as the result of larger production per farm and lower costs of production, these arising from further use of power and machinery, better adaptation of the intensity of cultivation to the grade and type of land, and further technical improvements. Prices of farm products at the farm will rise very little relative to the general price level. Land values will establish almost a new level for the time being at a point just a little below where they are now. Rural living will improve appreciably more than rural incomes, principally because the decline in rural population, which will continue, although at a slackening rate presently, will mean a larger per-capita income for the farm population. Exports of farm products will decline a little in spite of the expansion of production. Land will go out of crops and even out of farms almost as rapidly in some sections as it comes into crops and farms in others. The new land in farms will be mostly that which lends itself to the use of power and machinery.

The nation needs to decide now whether it wishes its agriculture further to subside, relatively and even absolutely; whether it wants an increasing concentration of its people in urban areas and occupations. Probably about 22 per cent of our people live on farms now. By 1940, if no significant measures are taken to prevent, probably 15 per cent or less of our people will live on farms. No country of Europe except England and Wales (combined) had as low a percentage as 15 when its last census was taken. No one wants any family to stay on a farm if it can do better in the city. No one who gives the matter serious thought favors maintaining by subsidies a farm population much larger than can be justified by financial return. But there are reasons enough of a social nature—and even economic, in the true sense of that term—to warrant burdening the cities a little in order to maintain a larger farm population than we otherwise will have, and provide a better and fuller rural life. The greatest need now is to provide a better kind of living in the farming districts, especially better education, better health, and better recreation.

The national policy thus far has been in the opposite direction from the foregoing—has favored urban industry at the expense of agriculture. This is true, even though the nation has done as much for its agriculture along many important lines as has any nation on the earth.

The recent spasm of legislation designed to help agriculture largely ceased after 1923. Those measures which were passed during this spasm helped slightly in the recovery of 1921 to 1923. The emergency credit legislation helped most. There is promise that some of the legislation of that period, such as the central marketing control measures and the Credit Act of 1923, will, in time, prove to be of considerable value.

There is need for a more vigorous program of agricultural reform than has thus far been undertaken. Some of the measures should be of the sort which will assist farm people more freely in solving their own problems and making their own readjustments. Others must be designed to assist them in getting together in cooperatives and working out their problems by associated effort. But after all this has been done, there will still be need for a considerable program of regulation and of governmental participation in agricultural affairs—such regulation as is represented by control of marketing and commercial credit facilities; such participation as is represented by the use of the taxing authority, the levying of import duties, the setting-up of quasi-governmental credit and marketing agencies, the establishing of public forests and reclamation projects, the building of highways, and the provision of rural education and rural health facilities. State and local governments have fully as large obligations with respect to this program as has the national government.

THE SURPLUSES

The program of agricultural reform has been much confused, and possibly delayed, by the injecting of the surplus controversy into it. The McNary-Haugen bills were not surplus bills in any true sense of the term ''surplus.'' They provided plans for raising the prices of farm products by making the tariff duties effective. They are therefore discussed in Part III of this book, which deals with the various price-raising plans.

The type of real surplus which is most serious is that which results from overplanting or overbreeding for a series of years —such as exists with sugar at present, probably also with rubber, wheat, and corn. The result of such a surplus is a level of prices for the time being that will not support the growers of the product at their accustomed scale of living. Another type of surplus is that which may result any year as a result of favorable weather. A third type is that which happens every year with almost all farm products—the season surplus which must be carried till the consumers are ready for it.

The relation in the United States of price to supply of cotton, potatoes, and other similar crops is such that their total gross value and their total net value (after expenses of production are deducted) is greater from a small crop than from a large one. The price of these products rises so fast when the supply fails that it more than offsets the decrease in volume sold. The same is true for all meats combined; but probably not for any one kind of meat considered by itself. As the supply of beef falls off, pork and mutton are substituted and the price rises less rapidly in consequence. (The data upon this subject point to uncertain conclusions.) The total value of the world crop of wheat also rises as the supply fails; but not that of the United States crop alone. The production of other countries is usually not short in the same years that ours is. In consequence, usually our large crops of wheat bring in the most money. Corn and oats crops which are about normal probably sell for the most money, although the data as to this are far from conclusive.

What evidence there is indicates that acreage or production of most farm products usually increases somewhat the year following high prices, even though it may have been caused by low yields, and still more in the second year following.

The slope of the curve of relation of supply to price for most farm products is somewhat steeper for short crops than for large crops. The effect of this is to make an enlarged carryover of such crops generally reduce prices more in the year following than it raises them in the first year. A program of enlarging the carryover in order to stabilize incomes of growers is therefore likely to lower the average price received and use up the capital of the corporation doing the holding. To have stabilized the income of the cotton growers from 1899 to 1913 would have cost the corporation about $15,000,000 a year, on the average, and the growers about $16,000,000 in addition. From 1914 to 1927, the costs would have been much larger.

No single plan of enlarging the amount of season surpluses carried over till later in the same year will be profitable, although, in general, some gains could have been made in the past by enlarging the fall carryover of cotton in years when its production was *below* normal, and the fall carryover of wheat when its production was *above* normal. This plan may not work in the future. To the extent that it is possible at present, or may prove to be possible in the future, to forecast price movements more surely than it is now done by the growers, a program of selecting the months in which to do the holding will enable the growers to realize slightly larger returns than they are now receiving. But price forecasting never will be done with much certainty; and it surely cannot be done with much certainty at present. Even the understanding of price movements now available can be useful to growers and their cooperative organizations if it is applied with intelligence and discretion.

PRICE RAISING BY GOVERNMENT ACTION

The conventional method of raising prices of commodities by government action is by imposing tariff duties upon the imports of them. This device has been used to raise prices of some farm products in the past; and it may be somewhat further used to this end. A careful survey of the possibilities along this line leads to the conclusion that the average gross farm income might be increased by $30 in this way, and the average net farm income by $15. Further duties on sugar, wool, flaxseed, and beef, and new duties on hides and raw cotton, would contribute most of this increase of $30 in gross income; but some of these would add more to the farm family expenses than to its income. Lowering the level of import duties on manufactured products would add more to the real income of farm families than can any possible increase in duties on farm products. But there is no chance of such a development in the immediate future. What is more likely to happen is that enough duties on manufactured products will be raised to use up, in the form of higher prices, more than the possible $15 of increase in net farm income.

Realizing the foregoing, the farm organizations have since 1924 been urging some other form of government price-raising activity. They have been trying to work out a plan for getting the prices of the farm products used in domestic consumption raised by the amount of the tariff duty just as would be the case if the tariff duty were effective, with the export part of the crop still being sold at world prices. The McNary-Haugen plan, if it could have been enacted into law, and if it could have been made to work, would have accomplished this purpose for wheat and some other products. It would have added 8, 23 and 24 cents, respectively, to the prices received for the 1925, 1926, and 1927 crops. If production were increased to 1,000,000 bushels in consequence, only 8.6 cents a bushel would have been left for the growers. Applied to cotton, together with an import duty of 5 cents per pound, it would have added 1.02, 0.90, and —0.62 cents respectively to the 1925, 1926, and 1927 crops, assuming no increase in production resulting. With an increase of 10 per cent in production resulting, the growers would have lost from $100,000,000 to $200,000,000. At present duties on pork and pork products, the McNary-Haugen plan would have added only from 3 to 9 cents per hundredweight to the prices received for hogs in the various years from 1921 to 1926.

The export debenture plan would be easier to operate, but in the form presented to Congress would have stimulated production more, and the debenture rates would have been added to the import duties collected by many foreign countries. These difficulties could be largely if not altogether overcome by setting up more rigorous checks on the expansion of production. The using of the revenues collected on imports of other farm products, or on manufactured goods, even, to pay the export debentures, can be justified on economic grounds; but there is still the problem of making up the loss in public revenues resulting.

This book (Chap. X) presents for the first time a plan, here called the ''transferable-rights'' plan, for giving the producers the benefit of the full amount of the tariff duty on that part of their product which is consumed in the United States, while the rest of the crop is sold in the world market at export prices, with no bounty of any kind on the production for export. It calls for the difficult task of assigning quotas to townships and making allotments to individual producers, as is now done by some milk producers' associations in the United States. In spite of this difficult feature, it might prove to be the most desirable plan for raising the price of wheat, cotton, and any other commodities whose production can be ascertained at the processing or transportation stage.

For wool, sugar, flaxseed, beef, lemons, and possibly dairy products, surely the preferred price-raising device is imposing import duties. For pork and poultry products, the export-debenture plan seems the only one workable. For wheat and cotton, the transferable-rights plan should be carefully considered. In combination, they would be about as effective in raising prices of farm products as are the present duties on manufactured products in raising their prices. They would add to the cost of living in the same way as do the present duties on manufactured products. If consumers found the burden too great, a general all-round lowering of the tariff duties would accomplish the ends desired with about equal effect on agricultural and manufacturing production.

ADJUSTMENT—INDIVIDUAL AND COOPERATIVE

In the long run, the most important of the problems of agriculture are solved by the slow process of individual adjustment to the changing economic environment. Even if artificial devices are set up, the individual still needs to adjust himself to them. The difficulty with depending on such adjustment is that it is slow and economic conditions are always changing, with the result that agriculture never catches up. But the readjustments can be considerably quickened if the individual farmers are presented with all the information which they need in readily usable form and taught how to use it. A vigorous program pointed to this end will aid agriculture in the end more than anything else that the nation can provide.

Some of the features of such a program which need developing are the following:

A. A foreign information service that will supply the facts as to changing agricultural production and markets abroad.

B. More support for the production and price-reporting service of the Department of Agriculture.

C. More price analysis.

D. More analysis of the economics of production in various areas.

E. More market-news service.

F. More adequate census data.

G. More agricultural outlook work.

The major circumstance complicating the program of assisting farmers in their individual adjustments is the very great number of them, and the smallness of their individual operations. If farmers can be joined in cooperatives, the task is considerably simplified. But the cooperatives need assistance the same as do the individuals.

The extremest measure of assistance to individuals and cooperatives that has been proposed is the stabilization corporation plan advocated by Secretary Jardine and now approved by Secretary Hyde. Viewed as the framework for a program of general aid and guidance to agriculture, the stabilization corporation plan has much to recommend it. Its two major specific devices, the enlarging of the carryover of large crops, and insurance of crops against price decline, will not work as intended by their sponsors; but if the act establishing them is broadly enough framed, it may become in time the basis for some very worthwhile assistance to agriculture. Probably in the end it will be found necessary to assess the costs of stabilization against the producers, as was provided for cotton in the last McNary-Haugen bill.

THE REFORMS

The specific reforms and readjustments needed in agricultural production are larger family-sized farms; more use of power and machinery; more extensive cultivation of the poorer lands, or their conversion to pasture or forest; more intensive cultivation of the better land, in terms of capital goods, not labor; heavier feeding of the best livestock and less feeding of poor livestock; more specialization (less diversification) in the areas of general farming; more livestock in most of the areas now producing one or a few crops; and quicker adjustments to fundamental changes in economic conditions such as competition with other areas at home or abroad. Large-scale factory farming will have very little development; chain farming will have somewhat more development. The family-sized farm will continue to be the principal unit in agricultural production. Public agencies must assist with the foregoing readjustments. The changes needed will nearly always be by regions rather than for the country as a whole. Hence the problems of agricultural production must be analyzed by regions.

Any probable increase in the population of the United States could be provided with food and other farm products without taking another acre of land into farms and without any decline in the output per person or per unit of capital engaged in agriculture. No doubt, however, some land now outside of farms will prove to be more productive than some of that now in farms; and capital-extensive methods of using some land now outside of farms will give larger returns than would growing our food supply on our present farm land. There is, therefore, place in the national land policy for a certain amount of carefully considered reclamation and encouragement of land settlement; but it must be very carefully considered and properly timed. Just at present, efforts should be directed at assisting in taking land out of farms rather than putting it into farms. A national land-planning commission with advisory power only, but with resources to enable it to take a general inventory of the land resources of the nation, and to make more careful plans for crucial areas, would be of great service to the nation.

The forest needs of the nation can be amply met if taxation of private forest holdings can be placed upon a proper basis and if the federal and state governments adopt a more vigorous program of fire protection and acquisition of forest lands. Recreation uses can be combined with forest uses to great advantage, as at present in the state of New York.

In the next 5 or 10 years the present farming population might gain a little from permitting freer immigration. But if very many of the immigrants became farm laborers or tenants, or settlers on new or abandoned lands, the scale of rural living would be lowered, as it has been by such a process in the past 50 years.

Improvement of waterways will be of almost negligible benefit to agriculture in the next decade, but may be of more significance over a longer period if they assist in decentralizing industry. Of more consequence to agriculture is a better directed and better financed program of highway improvement.

What marketing principally needs is better integration. Cooperative marketing is contributing considerably in this direction. The new Division of Cooperative Marketing is very effectively assisting development in this field. Its work should be expanded as rapidly as men can be found who have proper training and experience for the work. The states should take a more vigorous hand in such work. What is needed more than anything else is a program of education in the fundamental principles and methods of cooperation. The cooperatives also need better protection against unfair competition while getting started; and probably better credit facilities. The other important line of marketing development is that of assisting consumers with their buying and protecting them against the fraudulent claims of sales departments and advertisers.

The principal credit needs of agriculture are for a better and more vigorous administration of the Federal Farm Loan and Intermediate Credit System, legislation that will give the latter system a chance to handle the sort of business for which it was created, and fewer and better-managed and supervised commercial banks in the rural districts.

More attention needs to be given to the fundamentals of the economy of organization and management of public enterprises. Local governmental units must be assisted along these lines. The volume of public enterprise is bound to increase along with the rising scale of living; and the necessary resources for financing it are available and will be secured by revision of the taxation system. Farm people need to be given a better understanding of the operation and incidence of income taxes.

The foregoing program of agricultural reform will take many decades to carry through. Long before it is finished, new reforms will appear necessary. Agricultural reform is, therefore, a continuous process. This process was largely interrupted, so far as the Federal legislation is concerned, during the Coolidge administration. Let us hope that it will be renewed in earnest under President Hoover, in order to make up the arrears of the past 4 years.

APPENDIX A

The Dec. 1 farm values of cotton from 1890 to 1927 were first deflated by dividing by the Bureau of Labor Statistics index of wholesale prices in December each year. The trend of values for each year was then obtained by projecting a trend line fitted by the method of least squares to the deflated values of 9 preceding years. It was thought that this method would give trend values more nearly comparable with the values that would have been maintained by a stabilization corporation undertaking such a carryover program without knowing the future trends in value of cotton crops, than would trend lines fitted to the data for the entire period as in Charts 7, 8, and 10.

The above trend values, restored to the current price level, were then divided by the production of cotton each year to obtain the price that would have been necessary to maintain them. The change in carryover that would have been necessary to maintain this price was determined by estimating the difference between the production that would have sold for this price and for the actual price each year from the formula worked out by B. B. Smith: Log of Price equals 1.548 times the Log of Index Numbers of Wholesale Prices (December) —1.705 times Log of Cotton Supplies (million bales) —0.051.

Estimates of the change in cotton supplies that would have caused a given change in price in a particular year on this basis are much more accurate than forecasts of prices with the same formula. The value of money and many other factors affecting the relation between supply and demand from year to year would be constant for the same year.

In years when the carryover of cotton was insufficient to maintain the trend values of cotton crops, the price that would have prevailed was estimated from the above formula.

APPENDIX B

Holding costs for cotton, wheat, and corn were estimated as follows: Storage costs for cotton were estimated by A. M. Agelasto of the Cotton Marketing Division, Bureau of Agricultural Economics, as 10 cents per bale per month from 1889 to 1904, 15 cents from 1905 to 1908, 20 cents from 1909 to 1912, 25 cents from 1913 to 1915, and 30 cents from 1916 to 1927.

Storage costs for wheat and corn each year were obtained from the annual reports of the Chicago Board of Trade. They are the maximum commercial rates that can be charged by members of the Chicago Board of Trade.

Insurance was charged at the rate of 2 per cent per year, and interest at the average annual rate of 4- to 6-month double-name commercial paper at New York, as quoted in *Standard Statistical Bulletin,* 1928–1929, Biennial Issue, p. 12, on the average price per pound or per bushel during September for wheat, October for cotton and during November for corn.

TABLE A.—SIGNIFICANT INDICES OF AGRICULTURAL CONDITIONS, 1910 TO 1928

Year	I	II	III	IV	V	VI	VII
	Wholesale prices, all commodities	Wholesale prices, non-agricultural	Wholesale prices, agricultural	Prices paid to farm producers	Prices paid by farm producers	Ratio, 3 : 2	Ratio, 4 : 5
1910	103	102	103	103	98	101	105
1911	95	96	94	95	101	98	94
1912	101	100	101	99	100	101	99
1913	102	105	99	100	100	94	100
1914	100	97	102	102	101	105	101
1915	103	101	104	100	106	103	94
1916	129	138	121	117	123	88	95
1917	180	182	179	176	150	98	117
1918	198	188	208	200	178	111	112
1919	210	199	221	209	205	111	102
1920	230	241	221	205	206	92	99
1921	150	167	133	116	156	80	75
1922	152	168	136	124	152	81	81
1923	156	171	143	135	153	84	88
1924	152	162	144	134	154	89	87
1925	162	165	158	147	159	96	92
1926	154	161	147	136	156	91	87
1927	149	152	146	131	154	96	85
1928	153	149	156	139	156	105	89

Columns I, II and III, Bur. Labor Stat. (1910 to 1914 = 100). The 1928 values are estimates from the index numbers on 1926 base.

Column IV, "Agricultural Situation," U. S. Dept. Agr. (1910 to 1914 = 100).

Column V, "Agricultural Situation," February, 1929.

TABLE B.—SIGNIFICANT INDICES OF AGRICULTURAL CONDITIONS, 1910 TO 1928

	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII
Year	Gross value of farm production	Volume of crop production	Volume of livestock production	Buying power of farm income (VIII ÷ V, Table A)	Land prices	Cost of distribution	Wages paid to hired farm labor	Taxes on farm property	Exports all agricultural commodities	Exports all agricultural commodities except cotton
1910	95	96	91	98	....	92	97	....	78	86
1911	93	91	106	95	....	98	97	....	92	92
1912	99	108	103	96	97	102	101	.....	114	100
1913	105	96	102	103	100	104	104	....	110	119
1914	108	108	98	108	103	105	101	100	106	103
1915	115	114	105	108	102	105	102	102	138	189
1916	137	100	114	117	108	110	112	104	118	184
1917	185	106	113	130	117	129	140	106	118	182
1918	219	107	126	128	129	159	176	118	101	165
1919	235	109	122	117	140	174	206	130	145	255
1920	197	119	112	91	169	202	239	155	134	207
1921	136	98	116	84	157	190	150	217	127	212
1922	149	109	125	94	139	175	146	232	137	218
1923	164	110	139	100	135	177	166	246	112	182
1924	162	108	142	98	130	180	166	249	104	153
1925	173	110	136	103	127	185	168	250	126	167
1926	172	113	137	103	124	192	171	253	106	123
1927	169	113	140	108	119	190	170	..258..	136	143
1928	....	....	....	....	..117..	190	169	....	112	138

COLUMN VIII, *Crops and Markets*, Table 2, Column 4, July, 1927 (1910 to 1914 = 100). Index for calendar year 1927 estimated from data for crop years 1926 to 1927 and 1927 to 1928.

COLUMNS IX and X, Harvard Review of Economic Statistics, 1927, p. 143; 1922, p. 216 (converted to 1910 to 1914 base) and Weekly Letter of Harvard Economic Society, Dec. 15, 1928.

COLUMN XI, This index is an expression of the volume of goods and services that could have been bought with the gross farm income. How much was bought is another question.

COLUMN XII, *Cir.* 15, Table 1 (1912, 1913, 1914 = 100) and "The Agricultural Situation" February, 1929. The data on land prices are available only from 1912.

COLUMN XIII, *Farm Economics*, Number 57, February, 1929.

COLUMNS XIV and XV, U. S. Dept. Agr. Yearbook, 1927. Table 503, page 1153 and *The Agricultural Situation*, February, 1929. Cir. 60, U. S. Dept. Agr. Table 12.

COLUMNS XVI and XVII, *Foreign Crops* and *Markets*, Sept. 24, 1928, Table 3, page 488 (year ending June 30).

TABLE C.—DIFFERENCE BETWEEN THE WEIGHTED * AND SIMPLE AVERAGE PRICE OF SPOT COTTON AT NEW YORK (1890–1903) AND NEW ORLEANS (1904–1927) COMPARED WITH THE AVERAGE COST OF HOLDING

(In Cents per Pound)

Crop year	Simple average of weekly prices	Weighted average price	Simple average price less weighted average price	Cost of holding five months	Net gain	Net loss
1890	9.30	9.65	−0.35	0.43	....	0.78
1891	7.65	8.06	−0.41	0.36	....	0.77
1892	8.55	8.87	−0.32	0.31	....	0.63
1893	7.72	8.00	−0.28	0.40	....	0.68
1894	6.33	5.98	0.35	0.22	0.13	
1895	8.16	8.55	−0.39	0.31	....	0.70
1896	7.68	7.83	−0.15	0.36	....	0.51
1897	6.27	6.21	0.06	0.25	....	0.19
1898	6.00	5.70	0.30	0.23	0.07	
1899	8.51	7.52	0.99	0.29	0.70	
1900	9.35	9.89	−0.54	0.37	....	0.91
1901	8.78	8.38	0.40	0.31	0.09	
1902	10.00	9.02	0.98	0.35	0.63	
1903	12.86	12.24	0.62	0.41	0.21	
1904	8.54	8.72	−0.18	0.37	....	0.55
1905	11.02	10.91	0.11	0.42	....	0.31
1906	10.96	10.50	0.46	0.50	....	0.04
1907	11.28	11.33	−0.05	0.54	....	0.59
1908	9.78	9.18	0.60	0.39	0.21	
1909	14.49	14.15	0.34	0.54	....	0.20
1910	14.65	14.50	0.15	0.61	....	0.46
1911	10.74	10.02	0.72	0.44	0.28	
1912	12.22	11.97	0.25	0.48	....	0.23
1913	13.22	13.18	0.04	0.68	....	0.64
1914	8.23	7.79	0.44	0.45	....	0.01
1915	11.90	11.50	0.40	0.52	....	0.12
1916	19.15	18.02	1.13	0.69	0.44	
1917	29.20	28.61	0.59	1.05	....	0.46
1918	29.82	30.03	−0.21	1.32	....	1.53
1919	38.82	38.51	0.31	1.39	....	1.08
1920	15.09	16.11	−1.02	1.12	....	2.14
1921	18.31	17.81	0.50	0.98	....	0.48
1922	26.31	24.38	1.93	0.89	1.04	
1923	30.79	30.96	−0.17	1.15	....	1.32
1924	23.96	23.76	0.20	0.88	....	0.68
1925	19.38	20.31	−0.93	0.82	....	1.75
1926	14.47	13.53	0.94	0.63	0.31	
1927	20.08	19.91	0.17	0.82	....	0.65

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* The weekly average prices were weighted by weekly receipts of cotton at interior towns as published in "Our Cotton Facts."

TABLE D.—DIFFERENCE BETWEEN THE SIMPLE AND WEIGHTED * AVERAGE PRICE OF NO. 1 NORTHERN WHEAT AT MINNEAPOLIS, 1899–1926, COMPARED WITH THE AVERAGE COST OF HOLDING

(In Cents per Bushel)

Crop Year	Simple average of monthly prices	Weighted average price	Simple average price less weighted average price	Cost of holding six months	Net gains above commercial holding costs	Net gains above one-half commercial holding costs
1899	68.2	67.0	1.2	6.9	– 5.7	– 2.2
1900	72.5	74.0	– 1.5	7.2	– 8.7	– 5.1
1901	72.4	71.0	1.4	6.1	– 4.7	– 1.6
1902	77.3	75.0	2.3	6.2	– 3.9	– 0.8
1903	91.9	89.0	2.9	7.1	– 4.2	– 0.6
1904	109.8	110.0	– 0.2	8.4	– 8.6	– 4.4
1905	81.4	86.0	– 4.6	7.4	–12.0	– 8.3
1906	86.3	82.0	4.3	7.4	– 3.1	0.6
1907	108.3	106.0	2.3	9.3	– 7.0	– 2.3
1908	115.3	115.0	0.3	8.1	– 7.8	– 3.7
1909	111.0	109.0	2.0	7.9	– 5.9	– 1.9
1910	102.2	105.0	– 2.8	10.2	–13.0	– 7.9
1911	107.7	107.0	0.7	9.7	– 9.0	– 4.1
1912	88.0	87.0	1.0	9.1	– 8.1	– 3.5
1913	91.1	88.0	3.1	9.7	– 6.6	– 1.7
1914	134.4	120.0	14.4	10.1	4.3	9.4
1915	118.7	109.0	9.7	9.0	0.7	5.2
1916	218.3	176.0	42.3	11.7	30.6	36.5
1917	217.5	220.0	– 2.5	14.8	–17.3	– 9.9
1918	237.9	225.0	12.9	15.9	– 3.0	5.0
1919	284.9	272.0	12.9	17.0	– 4.1	4.4
1920	177.2	207.0	–29.8	21.5	–51.3	–40.5
1921	131.2	143.0	–11.8	15.8	–27.6	–19.7
1922	120.9	120.0	0.9	13.0	–12.1	– 5.6
1923	122.3	117.0	5.3	13.6	– 8.3	– 1.5
1924	161.8	156.0	5.8	13.3	– 7.5	– 0.8
1925	161.2	161.0	0.2	13.6	–13.4	– 6.6
1926	144.3	146.0	– 1.7	13.6	–15.3	– 8.5

* Daily closing prices weighted by car-lot sales.

Table E.—Wheat: Possible Gains and Losses above Estimated Commercial Holding Costs from September to March 1 and August 1, 1899 to 1916; 1921 to 1926

Year	Maximum gains above costs up to, cents		Gains and losses above costs on, cents	
	March 1	August 1	March 1	August 1
1899	1.3	8.7	−12.7	−5.7
1900	0.8	0.8	−15.0	−34.5
1901	7.0	7.0	−0.8	−4.1
1902	7.7	11.8	4.6	8.1
1903	13.5	13.5	5.8	5.5
1904	1.4	1.4	−12.8	−26.4
1905	7.4	7.4	−10.2	−18.8
1906	4.9	21.6	−1.5	14.8
1907	10.2	10.2	−8.2	−11.5
1908	6.6	23.2	4.1	14.2
1909	8.6	12.2	3.7	−1.4
1910	1.6	1.6	−22.7	−23.9
1911	1.8	1.8	−10.1	−18.1
1912	2.0	2.0	−11.2	−16.8
1913	....	1.4	−3.5	−9.4
1914	37.0	41.7	28.1	6.9
1915	37.0	37.0	6.6	17.1
1916	34.0	169.5	16.7	112.0
1917				
1918				
1919				
1920				
1921	....	....	−15.2	−48.1
1922	16.2	16.2	1.0	−22.4
1923	0.2	0.2	−16.7	−9.1
1924	60.1	66.5	48.0	3.4
1925	22.8	22.8	−7.0	−11.1
1926	3.4	3.4	−16.5	−26.9

TABLE F.—WHEAT: POSSIBLE GAINS AND LOSSES ABOVE ONE-HALF THE ESTIMATED COMMERCIAL HOLDING COSTS FROM SEPTEMBER TO MARCH 1 AND AUGUST 1, 1899 TO 1916; 1921 TO 1926

Year	Maximum gains above costs up to, cents		Gains and losses above costs on, cents	
	March 1	August 1	March 1	August 1
1899	1.8	13.9	− 9.2	0.6
1900	1.4	1.4	−12.5	−28.2
1901	9.0	9.0	2.2	1.3
1902	9.8	17.2	7.8	14.1
1903	16.5	16.5	9.3	12.1
1904	2.1	4.8	− 8.6	−18.7
1905	8.0	7.4	− 6.4	−12.0
1906	8.3	26.9	2.5	22.2
1907	11.0	11.0	− 3.6	− 3.0
1908	9.8	29.2	8.1	21.6
1909	10.9	19.6	8.6	6.6
1910	2.4	2.4	−18.3	−15.5
1911	2.6	3.4	− 5.3	− 9.3
1912	2.7	2.7	− 6.8	− 8.6
1913	4.0	9.4	1.3	− 0.6
1914	41.3	47.5	33.1	16.9
1915	40.0	40.0	10.1	25.6
1916	36.0	177.5	22.7	123.0
1917				
1918				
1919				
1920				
1921	....	....	− 7.2	−33.6
1922	19.6	19.6	7.5	−10.4
1923	1.2	10.6	− 9.9	3.3
1924	71.8	71.8	54.4	15.4
1925	26.4	26.4	− 0.2	1.3
1926	4.5	4.5	− 9.9	−14.3

TABLE G.—CORN: POSSIBLE GAINS AND LOSSES ABOVE ESTIMATED HOLDING COSTS PER BUSHEL FROM NOVEMBER TO MAY, 1892 TO 1927

Year	Commercial holding costs, in cents		One-half commercial holding costs, in cents	
	Holding to May 1	Selling in May	Holding to May 1	Selling in May
1892	....	− 6.5	....	− 2.7
1893	....	− 7.3	....	− 3.3
1894	....	− 1.7	....	+ 1.4
1895	....	− 4.8	....	− 1.9
1896	....	− 4.8	....	− 2.0
1897	0.3	− 3.3	2.7	+ 6.1
1898	....	− 5.0	1.3	− 2.1
1899	2.9	+ 0.7	5.4	+ 3.7
1900	....	− 0.7	2.4	+ 2.4
1901	2.7	− 2.7	3.5	+ 0.3
1902	....	−11.5	....	− 8.7
1903	1.0	− 0.1	3.6	+ 2.8
1904	....	− 9.7	....	− 6.4
1905	....	− 5.9	....	− 2.7
1906	....	+ 0.3	....	+ 3.6
1907	1.1	+ 6.4	4.2	+10.1
1908	....	+ 3.5	1.6	+ 7.0
1909	1.5	− 7.6	2.8	− 4.2
1910	....	− 2.6	....	+ 0.7
1911	0.1	− 2.5	3.7	+ 1.7
1912	....	− 5.8	....	− 1.6
1913	....	−11.8	....	− 7.1
1914	....	− 3.1	1.4	+ 1.4
1915	7.0	+ 1.9	9.3	+ 6.1
1916	34.4	+10.4	38.3	+15.1
1917	....	−59.7	....	−52.4
1918	22.6	+33.0	28.0	+39.4
1919	9.1	+38.2	14.7	+44.8
1920	....	−33.8	....	−27.3
1921	2.4	+ 2.9	6.5	+ 8.7
1922	....	− 0.8	4.2	+ 5.2
1923	....	−18.8	....	−12.5
1924	6.3	−12.5	7.7	− 6.0
1925	....	−23.5	....	−17.4
1926	0.5	+ 1.2	1.8	+ 7.1
1927	6.4	+10.4	11.6	+16.5

TABLE H.—AVERAGE DOMESTIC EXPORTS AND IMPORTS FOR THE YEARS ENDING JUNE 30, 1927 AND 1928 BY GROUPS OF COMMODITIES
(In Thousands of Dollars)

Commodities	Domestic exports *	Imports †	Excess of exports + or of imports −
Animals and animal products:			
Animals, live	6,325	21,919	− 15,594
Dairy products	17,283	39,927	− 22,644
Eggs and egg products	7,217	5,651	+ 1,566
Hides and skins, raw (except fur)	11,498	120,737	−109,239
Meats and meat products	191,105	20,331	+170,774
Silk unmanufactured	....	402,304	−402,304
Wool and mohair, unmanufactured	159	81,567	− 81,408
Animal products, miscellaneous	13,768	37,526	− 23,758
Total animals and animal products	247,355	729,962	−482,607
Vegetable products:			
Chocolate and cocoa	596	54,832	− 54,236
Coffee	6,200	295,633	−289,433
Cotton, unmanufactured:			
Long staple:			
Sea island	293	....	+ 293
Other	125,071	15,299	+109,772
Short staple	711,376	25,705	+685,671
Linters	6,991	....	+ 6,991
Total cotton, unmanufactured	843,731	41,004	+802,727
Fruits	120,038	55,006	+ 65,032
Grains and grain products	405,211	31,548	+373,663
Nuts	1,595	31,275	− 29,680
Oilseeds and oilseed products	41,499	151,058	−109,559
Seeds, except oilseeds	3,606	9,434	− 5,828
Spices	234	18,963	− 18,729
Sugar, molasses and sirups	9,947	255,412	−245,465
Tea	....	29,983	− 29,983
Tobacco, unmanufactured	136,023	67,738	+ 68,285
Vegetables	20,790	38,947	− 18,157
Vegetable products, miscellaneous	24,859	81,974	− 57,115
Total vegetable products	1,614,329	1,162,807	+451,522
Total farm products	1,861,684	1,892,769	+ 31,085

* U. S. Dept. Agr., *Foreign Crops and Markets*, Sept. 24, 1928.

† U. S. Dept. Agr., *Foreign Crops and Markets*, Oct. 8, 1928.

Table I.—Imports and Duties: Selected Groups of Commodities, 1927

Commodity groups	Value of imports, thousands of dollars		Duties collected, thousands of dollars	Equivalent ad valorem, percentage	
	Free	Dutiable		Dutiable	Free and dutiable
Manufactures:					
Textiles	14,910	352,282	152,936	43.4	41.7
Iron and steel	1,045	34,380	8,945	26.0	25.3
Machinery and vehicles	5,677	21,751	7,044	32.4	25.7
Manufactures, wood and mostly paper *	311,402	32,974	10,720	32.5	3.1
Tobacco	4,215	4,140	2,560	61.8	30.6
Leather and furs	41,415	29,730	9,916	33.4	13.9
Rubber	1	1,886	532	28.2	28.2
Chemical and related products	86,081	42,238	14,232	33.7	11.1
Total	464,746	519,381	208,885	40.2	21.2
Raw materials:					
Agricultural products †	804,786	351,802	78,555	22.3	6.8
Textiles	529,233	56,538	26,189	46.3	4.5
Sugar and related products	48,290	222,064	131,007	59.0	48.5
Tobacco	295	64,492	37,456	58.1	57.8
Wood and cork	11,837	9,064	896	9.9	4.3
Rubber	347,095				
Metals ‡	229,073	69,091	26,979	39.0	9.0
Total	1,970,609	773,051	301,082	38.9	11.0
Unclassified:					
Non-metallic minerals	137,955	124,960	39,815	31.9	15.1
Miscellaneous	106,748	65,638	27,057	41.2	15.7
Total	244,703	190,598	66,872	35.1	15.3
Grand total	2,680,058	1,483,030	574,839	38.8	13.8

* Includes wood manufactures, paper base stock and paper manufactures.

† Includes the following Dept. Com. classifications: animal and animal products less leather and fur manufactures; vegetable food products and beverages less sugar and related products; vegetable products, inedible, less rubber and manufactures and tobacco and manufactures.

‡ Includes Dept. Com. classification: metals and manufactures, except machinery and vehicles, less iron and steel manufactures.

TABLE J.—PRODUCTION, IMPORTS AND EXPORTS, AND DUTIES ON SELECTED MANUFACTURED PRODUCTS

	Domestic production 1925, thousands of dollars	Value of imports 1926, thousands of dollars		Equivalent ad valorem rate on dutiable imports percentage	Domestic imports 1920, thousands of dollars
		Free	Dutiable		
Agricultural implements.....	169,468	4,307	......	....	85,287
Aluminum ware, principally household...............	*39,344	......	97	78.30	531
Boots and shoes, other than rubber..................	925,383	3,702	333	34.75	13,113
Canned vegetables..........	245,427	......	8,490	24.14	6,749
Canned and dried fruits.....	174,757	......	15,401	28.51	53,360
Carpets and rugs, wool, other than rag.................	188,903	......	19,623	53.48	282
Clothing..................	2,606,906	......	19,324	61.22	4,235
Cotton cloth...............	1,071,573	......	16,264	29.49	73,739
Table cutlery..............	*13,094	......	226	65.23	589
Axes and hatches...........	*8,931	......	1	40.00	1,055
Augers, bits, chisels and planes..................	*2,699	......	278	43.62	316
Furniture..................	868,146	......	3,891	36.18	8,307
Gloves and mittens of cloth..	*28,126	......	6,903	72.62	270
Hats and caps (all materials).	*159,276	......	9,714	41.64	3,515
Knit goods.................	809,960	......	6,327	58.24	26,590
Leather, tanned, curried, and finished.................	462,014	25,567	2,038	20.00	49,815
Machine tools..............	175,592	......	517	30.00	18,868
Paints and varnishes........	470,736	......	3,822	33.26	18,147
Plated wire................	*53,898	......	922	60.00	910
Rubber tires and inner tubes.	925,002	......	161	10.00	33,174
Silk manufactures, finished products................	*640,672	617	31,878	54.41	18,999
Soap......................	278,273	......	951	21.59	8,393
Wire......................	184,463	......	783	25.15	5,923
Woolen goods..............	361,524	......	18,851	71.92	872
Worsted goods.............	596,266	......	2,329	65.81	

* Are 1923 census.

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